

KODIAK MANAGEMENT AREA
ANNUAL HERRING MANAGEMENT REPORT, 1995

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SAC ROE HERRING FISHERY

Area Description

The Kodiak Management Area (KMA) comprises the entire Kodiak archipelago and that portion of the Alaska Peninsula which drains into Shelikof Strait between Cape Douglas and Kilokak Rocks at Imuya Bay. The archipelago is approximately 150 miles long, extending from Shuyak Island south to the Trinity Islands. The Alaska Peninsula portion is about 160 miles long and is separated from the archipelago by the Shelikof Strait which averages 30 miles in width (Figure 1).

Historical Perspective

The Pacific herring *Clupea pallasii*, sac roe fishery began in Kodiak in 1964. From 1964-1995 sac roe herring harvests have averaged 1,862 short tons (tons) (Table 1 and Figure 2). Prior to 1974, the fishery was unregulated with regard to harvest quotas, gear types, seasons, and fishing periods. From 1964-1977 purse seine gear was used exclusively, with an average annual harvest of 898 tons and up to ten vessels participating in the fishery. Starting in 1974 purse seine gear was restricted to 150 fathoms in length and 1,000 meshes in depth. Between 1974 and 1978 the season ran from March 1 through June 30 with a harvest quota of 3,400 tons. Annual harvests, along with effort levels, fish abundance, prices and processor interest, fluctuated greatly from 1964 through 1977. Improved market conditions in 1978 prompted increased effort in this fishery with 29 purse seiners and 11 gillnetters participating. It was during this time period that spotters and tenders became involved in the fishery.

Between 1977 and 1982 the regulatory and management strategy went through a rapid developmental phase. Regulatory changes focused on gear efficiency, gear conflicts between seiners and gillnetters, gear level restrictions (exclusive registration and limited entry) and closed waters. In 1979 the sac roe season was reduced to May 1 through June 30, and the overall Guideline Harvest Level (GHL) was reduced to 2,400 tons distributed throughout the management area. A limit of 300 fathoms was also placed on the maximum length of gillnets and fishing periods were first limited to 48 hours open followed by 24 hour closures.

The maximum lengths for gillnets and purse seines were reduced again in 1981 to 150 fathoms and 100 fathoms, respectively. In addition, trawl and beach seine gear were eliminated as legal gear during the sac roe season. Fishing periods were established by emergency order in 1981, in which 24 hour fishing periods were followed by 24 hour closures. Beginning in 1982 the starting date for the season was changed from May 1, to April 15. In 1985 the fixed overall GHL of 2,400 tons was replaced by the current harvest strategy where GHL's are set annually on a stock by stock basis.

The overall regulatory effect during the developmental phase (1977-1982) has been the emergence of a relatively stable commercial sac roe herring fishery through 1991. During the last four years the herring stocks have dramatically increased with record to near record high harvests occurring in 1992 through 1995, averaging 4,927 tons.

Beginning in 1979, combined gear levels increased substantially, reaching a high of 201 units (92 seiners and 109 gillnets) and 193 units (79 seiners and 114 gillnets) in 1980 and 1981 respectively (Table 1 and Figure 3). With the implementation of limited entry following the 1981 sac roe season, new entry into the fishery was restricted to past participants until permanent transferable permits could be awarded. Since 1982, gear levels have been relatively constant with 90 to 120 units of gear fished annually. Transferrable permits for both gear types are still increasing as the Limited Entry Commission continues its determinations of participants who may qualify for a transferable permit. Only 52-81% of the available permits have been fished annually from 1989 through 1995 (Table 2).

Fishery Characteristics

The current KMA sac roe herring fishery occurs from April 15 through June 30 in 40-50 bays and coastal locations. The fishery opens at 12:00 Noon on April 15, with the entire management area opened at one time, excluding those areas where local stocks require protection. A unique characteristic of this fishery is that it typically commences prior to any major build-up of herring. This allows for a greater distribution of effort, which should reduce harvest rates within individual bays. Both gear types fish the same areas during the same time periods.

The overall trend in harvest during the past 17 years has been relatively stable, averaging 2,766 tons per year (Table 3). Prior to 1978, the entire sac roe herring harvest was taken by seine gear. In 1978 seven units of gillnet gear accounted for 3% of the total harvest. From 1979 to 1995 the percentage of the total harvest by seine gear ranged from a high of 85% to a low of 60% and averaged 76%. Gillnet percentage of total harvest peaked in 1988 at 40%, and averaged 24% from 1979-1995.

To reduce operational costs and to cover more areas most purse seiners form combines of two to ten vessels. These combines include one or several tenders and spotter aircraft. By 1979 the use of small, single engine, float equipped airplanes became more prevalent. Airplanes are the most productive way to find and direct seiners to harvestable herring. In 1986, several seiners started using side scanning sonar to locate schools of herring. This technology enabled fishermen to work during any time of the day or night and in adverse weather conditions which were unworkable for airplanes. Sonar technology continues to improve and most seiners are now equipped with scanning sonar equipment.

Gillnet vessels generally work independently and usually rely on processors to provide tenders to deliver their fish to the processing location. A few gillnetters are equipped with scanning sonar but the majority of these fishermen rely on color down-sounding sonar to locate herring schools, or fish areas where seiners are making sets.

Since 1979 seiners have gradually increased seine depths to the legal limit of 1,025 meshes, which includes 25 meshes of chaffing gear. Seines are restricted to 100 fathoms in length, however there was no restriction on the size of web which could be used. Because mesh size is not regulated several seiners have included salmon web in the lower portion of the seine. Further, the weight of the lead line was increased which resulted in nets which fished deeper (23-27 fathoms), sank faster, and improved catch rates.

Similarly, the gillnet fleet has evolved from floating nets of 80-100 meshes in depth to sinking nets with 120-160 meshes in depth. Gear efficiency appeared to have peaked prior to the 1994 season. It was generally assumed that deeper nets would be too difficult to operate on small gillnet vessels. Beginning in 1994 several gillnetters effectively used nets which were 240-300 meshes in depth and the use of this size gear increased for the 1995 season. Over the last few years the use of mechanical shakers has increased. The shaker is now a common tool and greatly reduces the time and effort needed to remove herring from the net and greatly increases gear efficiency.

During 1978-1983 herring were harvested at or near their spawning area. As fishermen's knowledge increased in identifying these areas, gillnet gear has been fished in deeper waters, (15-25 fathoms) further from the spawning destination. Fishing deeper waters and nets has increased the amount of herring harvested with low roe recovery. In most cases this fish is dumped. If ADF&G field crews document this then the poundage is subtracted from the management unit GHL. In some cases the low quality herring is sold as bait, which is also subtracted from the management unit GHL.

The Alaska Department of Fish and Game, (ADF&G), relies on the fishing industry to establish roe recovery standards. Generally, tenders will have a processor representative onboard to ensure that marketable sac roe quality herring are harvested. Competition among shore-based and floating processors results in this fishery having one of the highest exvessel values per ton in the state. The quality of Kodiak sac roe herring is generally high, due to inseason handling of a relatively small amount of herring over a long time period.

Fishery Monitoring

The ADF&G Commercial Fisheries Management and Development Division (CFMDD) manages this fishery from its Kodiak Office. From 1974-1993 ADF&G used one state vessel to monitor this fishery. In 1994 and 1995 a second state vessel was utilized to monitor the early portion of the fishery. The ADF&G vessel R/V Resolution was used in 1994 and the Fish and Wildlife Protection (FWP) vessel M/V Trooper assisted in 1995, with an ADF&G biologist aboard. From 1979-1995, in conjunction with the state vessels, several two person ADF&G field crews were also utilized to monitor this fishery. For the 1995 season a fishery technician was placed aboard a floating processor to collect catch reports and samples from the floating processors which anchored at Port Bailey, approximately 25 miles west of the city of Kodiak.

Field crews are stationed in management units which have historically produced the major harvests for a district. These crews are positioned in remote bays by chartered float planes or vessel and are equipped with an inflatable boat or skiff. Daily contact with fishermen, spotters and tender operators is maintained to acquire fishery data. Current harvest, effort levels, and fleet movements are reported via single side band (SSB) radio at least three times per day. The use of field crews has been a key element in preventing an excessive harvest from occurring and exceeding the GHL. Field crews also identify herring spawning areas and collect age-weight-length (AWL) samples from the commercial harvest. Frequent ADF&G aerial surveillance of the entire area supplements and often directs the placement of fishery monitoring field crews. The ADF&G office staff tally field crew, processor, and tender reports to assess herring harvests and

decide which management units need to be closed to fishing. Industry spotter reports are also used to provide information concerning all aspects of the fishery. A "Kodiak Sac Roe Herring Harvest Strategy" is distributed annually, which describes in detail the guideline harvest levels, regulatory changes, and expected fishing periods (Gretsch et al. 1995).

Fishing Seasons and Weekly Fishing Periods

The fishing season for the Kodiak sac roe herring fishery opens by regulation on April 15 and closes by regulation on June 30 (ADF&G 1995). Fishing periods are established by emergency order. For the past 14 years fishing periods began at 12:00 noon on odd numbered days and closed at 12:00 noon on even numbered days of the month. Staggered days of fishing provide clearly defined closed periods, which allows ADF&G staff time to assess, summarize, and update all harvest data from previous fishing periods.

The 1995 fishery was initially conducted with fishing periods lasting 24 hours. Beginning April 21, fishing periods were reduced to 10 hours (12:00 noon to 10:00 P.M.) followed by 38 hour closures. This change in the fishing schedule was prompted by: 1) ADF&G's inability to monitor the purse seine fleet during the night, 2) near record numbers of purse seine gear participating in the fishery, and 3) low roe recovery standards which were set by some processors. Beginning April 27, 24 hour fishing periods were reinstated in those management areas where ADF&G had fishery monitoring crews present. On May 3, the fishing schedule returned to 24 hour openings followed by 24 hour closures for all management units not previously closed due to herring harvest.

Districts and Management Units

The sac roe herring fishery districts and management unit descriptions were redescribed to facilitate the management of the 1995 fishery. The new descriptions are based upon the 1983 datum baseline on current NOAA marine charts. The previous descriptions are based on older baseline marine charts and discrepancies exist on management unit boundaries. The new descriptions include 13 districts which define geographical areas used in managing the sac roe and food/bait herring fisheries (Figure 4). The new descriptions were put into effect by emergency order for the 1995 fishery and will be proposed to the Alaska Board of Fisheries (BOF) during the 1995 meeting as a regulatory change. Sac roe fishery districts are further broken into management units intended to define the spawning area used by a stock of herring, or may be used to define a geographical area. There are a total of 81 management units.

Guideline Harvest Levels

Preseason guideline harvest levels (GHL's) are established for all management units which have produced consistent herring harvests in previous seasons. These GHL's reflect the status of a particular stock of herring by management unit or district. Criteria for establishing the 1995 GHL include: 1) 1994 expected biomass vs. actual biomass estimates, 2) trends in age composition, 3) level of recruitment (age-3), 4) proportion of the spawning population age-5

and younger, 5) proportion of age-2 fish in the spawning biomass (indicator of future recruit strength), and 6) spawn observations (extent, frequency, amount deposited). This information is supplemented by fishery performance information, i.e. the expected vs. actual harvest timing, duration, and level. Some management units are designated "exploratory" and are assigned no GHL because these areas have had sporadic or no harvest of herring in past years. Inseason closures in these exploratory areas are used to ensure that excessive harvests are minimized. If at any time during the season it appears that preseason expectations are incorrect, GHL's can be adjusted above or below preseason levels.

From 1979-1982 the KMA GHL was fixed at 2,400 tons. From 1983-1995 the GHL has varied each year (based on the criteria listed above) from a low of 1,640 in 1987 and a high of 4,550 in 1994. The preseason GHL has accurately reflected the actual harvests (Figure 5). These preseason harvest projections aid fishermen and processors in planning prior to the start of each season.

Inseason Fishery Management

Inseason management of the sac roe fishery relies primarily on ADF&G field crews stationed in management units where harvests are anticipated. Mobility of field crews to cover management units has improved in recent years with the addition of three, 21' skiffs and the use of state vessels. Presently two skiffs are used by field crews and a third skiff works from the ADF&G vessel R/V K-Hi-C. These skiffs allow field crews to monitor more management units and under rougher sea conditions than the 12 foot inflatable boats. Two crews still utilize inflatable boats which permit the crews to be rapidly moved by aircraft. The R/V K-Hi-C acts as mobile field station along with providing logistical support to field crews.

Generally, once the preseason GHL has been achieved for a management unit, it is closed for the season. Due to the rapid pace at which some fisheries occur, in-period closures are frequent. In management units which have an ADF&G field crew present, in-period closures may occur with as little as 15 minutes advance notice. In management units which do not have field crews present in-period closures may occur by: 1) announcement on single side band frequency 4.125 Mhz following the marine weather forecast at 8:00 a.m. or 6:00 p.m. daily and at 11:00 P.M. by ADF&G announcement, or 2) field announcement with the arrival of an ADF&G representative.

Processors and independent tender operators are required to provide daily tallies of herring deliveries by management unit and accurate estimates of herring onboard tenders that have not yet delivered to the cannery. Timely and accurate harvest reports from ADF&G field crews, fishermen, spotters, and processors are critical for assessing herring harvests and guide the management of the fishery. To date industry cooperation has been excellent in support of this fishery.

Actual fishery performance is used to evaluate the health of a particular fishery. Key components include: 1) duration of fishing time to harvest the management unit GHL, 2) catch per unit of effort, and 3) quality of herring harvested (including roe recovery, weight, and age composition).

Fish Ticket Data

Commercial catch data is compiled by ADF&G, CFMDD personnel. Actual dock weights of delivered herring are used inseason to verify initial harvest estimates. All final data are compiled post season from sales receipts (fish tickets) received from processors of purchased tonnages of herring. Fish ticket data is then compiled, and a summary of the herring harvest is generated. The ADF&G staff edits this summary for errors and lost fish tickets.

Biomass Estimates

ADF&G has attempted in previous years to conduct aerial surveys to assess the total KMA herring biomass. The results of aerial assessments provided only a limited evaluation of the biomass and did not give a true representation of the total biomass. Problems associated with aerial surveys in the Kodiak Area include: 1) herring tend to spawn in the evening, night, and early morning hours, limiting the time fish are visible in shallow water, 2) most management units have many distinct schools of herring which will spawn from April through June, 3) large numbers of juvenile herring, spawning herring, spawned out herring, and other fishes such as capelin can be found in sac roe herring fishery areas (fish may stay within an area for the duration of the sac roe season or may move, so that aerial biomass estimates may be duplicated or be incomplete), 4) the large geographical area for the KMA (57 management units which have identified spawning stocks), and 5) adverse weather conditions. Industry spotters have helped greatly in past seasons by providing biomass estimates, spawn observations, fleet movements and harvest estimates. These spotters are very experienced, many having been involved for several seasons in the KMA and other statewide herring fisheries. Biomass estimates are compiled for each district from surveys flown by industry and ADF&G spotters. It has been estimated by both ADF&G and industry spotters that only 25% to 50% of the actual biomass is observed for the KMA herring stocks. There appears to be a significant amount of subtidal spawning occurring in waters 10-20 fathoms in depth. These fish and spawning activity may not be detected from aerial surveys. Previous attempts to assess this subtidal spawning with divers were not successful.

Commercial Catch Sampling

Commercial catch samples are taken from purse seine harvests, except when a management unit has only a gillnet harvest. Seine caught herring are preferred for samples, since this gear type is less size selective than gillnet gear. Field crews collect samples from multiple seine sets within a management unit to obtain a representative sample of all age classes in the catch. Samples are also obtained from tenders and/or fishing boats delivering to the processor if it is known that the catch being delivered came from a single management unit. Catch samples are frozen upon arrival in Kodiak and are analyzed by the end of the sac roe season. Commercial catch samples are thawed and analyzed for age, weight, length, sex, and sexual maturity.

A single scale is removed from the preferred area, located on the left side of the fish, three rows below the lateral line and three scales posterior to the center of the opercular plate (Brodie, personal communication 1994). The scale is visually analyzed with the aid of a microscope to estimate the age of the fish in years.

Standard length measurements are taken on all herring sampled. This length is the straight line distance from the anterior most part of the fish, including the lower jaw with the mouth closed, to the end of the vertebra (hypural plate). Lengths are taken on all samples using a herring measuring board to the nearest millimeter (mm).

Weight measurements are taken on a Mettler balance to the nearest gram (g) of all fish within a sample.

The sex and sexual maturity of all sampled herring are recorded. Each fish is slit open and visually inspected for gonad relative maturity. The relative maturity is broken down into a scale of key characteristics ranging from virgin herring through spawned out herring, with eight levels of maturity identifying gonad key characteristics.

1995 Season Summary

The 1995 KMA sac roe herring season was 73 days in duration and a total of 4,604 tons of herring were harvested, which was three percent higher than the preseason GHF of 4,480 tons (Table 3). This was the third largest harvest for the fishery, exceeded by the 1994 and 1993 harvests of 5,893 and 4,929 tons respectively. Seine caught herring totalled 3,837 tons, which was 83% of the total harvest, while gillnet gear accounted for 767 tons, which was 17% of the total harvest. Harvest by gear type from 1979-1994 averaged 76% and 24% for seine and gillnet gear, respectively (Figure 6). During the period 1979-1995, seine and gillnets accounted for an average harvest of 2,140 and 626 tons, respectively (Table 3). The 1995 roe recovery averaged 9.8% for seine caught fish and 10.8% for gillnet caught fish. A combined average roe recovery of 10.0%. The average price per ton paid at the dock was difficult to establish due to the many factors involved, such as the size of herring harvested and delivery method, tendered or dock delivery. Prices ranged from \$800 to \$1500 a ton and for ADF&G's purposes an average price of \$1270 a ton was used to calculate estimated values of the fishery. The total exvessel value of the fishery was estimated at \$5.8 million.

A total of 73 seiners and 71 gillnetters fished during the 1995 season (Table 2). The 1995 seine effort was the highest experienced since 1981. The average exvessel earnings for seiners was estimated at \$67,000 and \$14,000 for gillnetters. There were 12 floating processors and seven shorebased plants, representing 14 companies registered to process herring within the KMA. A total of 108 tenders registered to transport herring within the KMA.

The increase in seine and floating processor effort can mainly be attributed to the closure of the Prince William Sound Management Area sac roe herring fishery. The relatively high preseason GHF for the KMA attracted seiners and processors to Kodiak. The floating processors operated in the vicinity of Port Bailey in Kupreanof Strait, near the major harvest locations of west Afognak Island and the Uganik District. The floating processors and most of the seine fleet departed the KMA at the end of April, to participate in the Togiak herring fishery.

District Summaries

The majority of the 1995 harvest was taken in the West Afognak, Uganik, Alitak, and Eastside Districts (Figure 7). Of the 81 management units in the KMA, herring was harvested from 32 units (Table 4), 16 of these units were closed inseason by emergency order (Appendix A), and 17 units were closed prior to the start of the season due to low stock abundance.

West Afognak District. The bays of Afognak Island are among the earliest areas in which herring are harvested in the KMA. ADF&G stationed one field crew, the ADF&G R/V Resolution, and the FWP vessel M/V Trooper in management units which were anticipated to have the earliest harvests. The field crew monitored the Raspberry Strait management unit, the R/V Resolution monitored Malina Bay for the initial opening, and the M/V Trooper monitored the Foul Bay, Paramanof Bay, and Malina Bay (Figure 8). On April 16, 709 tons of herring were harvested in Paramanof Bay exceeding the GHL of 400 tons and closing the unit. The Foul Bay management unit had a harvest of 801 tons (GHL of 75 tons) and closed April 25. The fact that the GHL was exceeding in these management units can primarily be attributed to stronger than expected spawning stocks. Age-7 herring were the dominant age class harvested in the aforementioned units.

The Raspberry Strait and Malina Bay management units had surprisingly low harvests this season, only 3 tons in Raspberry Strait and 55 tons from Malina Bay. The 1994 biomass observations and fishery harvests indicated strong stocks in these areas and it was felt that in the 1995 fishery this trend would continue. A possible explanation for the absence of herring within these management units is that they may have migrated to the Foul Bay and Paramanof Bay management units to spawn.

Of the six management units in this district which have GHL's, two were closed with the assistance of ADF&G field crews and the remainder were open through June 30. The total GHL for the district was 1,135 tons and a total of 1,504 tons were harvested. Purse seiners accounted for 96% of the harvest and gillnetters accounted for 4%.

North Afognak District. There are five management units within this district and four were closed prior to the start of the 1995 season (Figure 8). Herring stocks in these sections have declined in recent years, and closures were necessary to rebuild these stocks. There was no herring harvest from the one open management unit, the Shuyak Island Section.

South Afognak District. There are six management units within this district and all were closed prior to the start of the 1995 season (Figure 8). The herring stocks in this district have also declined and so all units were closed to rebuild the stocks.

Uganik District. A field crew and the R/V K-Hi-C were stationed within the Village Islands management unit to monitor the fishery within the Uganik District (Figure 9). On April 15 a large concentration of herring were present within the Village Island management unit, however the herring were "green" unmarketable herring. On April 18 a floating processor offered to purchase seven percent roe herring and approximately 120 tons was harvested during the night. Fishery activity intensified on the evening of April 19 and the Village Island management unit was closed at 9:30 P.M. with a total harvest of 314 tons, (GHL 250 tons). The fleet next moved

to the East Arm Uganik management unit and fishing activity concentrated near the boundary between East Arm and the Village Islands. It appeared that the herring biomass seen at Village Islands moved further into Uganik Bay at nightfall. During the night of April 19-20 at least seven seine vessels were observed fishing within the Village Island closed water area. The R/V K-Hi-C enforced the line through the night and no harvest occurred. The Terror Bay management unit was closed in the morning of April 20 with a harvest of 357 tons (GHL 200 tons). Most of this harvest occurred at night. On April 21 the fleet moved into the South Arm Uganik management unit and it appears that the herring biomass which was first harvested in Village Islands had moved further south into this management unit. A total of 392 tons (GHL 150 tons) was harvested in one hour and fifteen minutes of fishing time and the South Arm was closed. The East Arm and Northeast Arm Uganik Bay management units closed on April 23 with harvests of 179 tons (GHL 100 tons) and 78 tons (GHL 30 tons) respectively. The R/V K-Hi-C was moved to the Malina and Foul Bay management units, while the field crew returned to Kodiak. The West Uganik Bay management unit had a harvest of 19 tons, (GHL 75 tons). Fishery performance for the Viekada Bay management unit was lower than anticipated for the second consecutive year, with no harvest this season. Of the eight management units in the Uganik District with GHL's, five were closed with the assistance of ADF&G field crews and the remainder were open through June 30. A district total of 1,340 tons were harvested from a district GHL of 915 tons, 92% of this harvest was with purse seine gear and 8% by gillnet.

Uyak District. The Uyak District was the largest herring producing district within the KMA through the 1980's (Figure 9). Since 1991 fishery performance and spotter observations have indicated a decline in abundance of herring in this district. ADF&G responded to this decline by reducing the GHL's for these management units for the 1992 through 1994 seasons. The entire district was closed during the 1995 herring season as a further step to promote the recovery of these stocks.

Alitak District. The Alitak District is comprised of nine management units, two are exploratory areas, and seven have GHL's (Figure 10). Fishing activity started within this district at the end of April with the majority of the seine fleet departing to the Togiak fishery in early May. The R/V K-Hi-C monitored the Alitak District from May 2 to May 11. There was also a field crew stationed in the Inner Deadman Bay management unit. The Sulua Bay management unit was closed on May 13 with a harvest of 199 tons, (190 ton GHL). The Portage Bay section, (GHL 75 tons) also closed inseason on June 12 with a harvest of 77 tons. The remaining management units were open through June 30. The ADF&G crew moved from Inner Deadman Bay to Upper Olga Bay on May 26. Fishery performance in this unit has declined over the last four years and the GHL has been lowered annually. There was no harvest this season. The Inner and Outer Deadman Bay management units remained open until June 30 and the harvest totalled 12 tons (GHL 150 tons) and 118 tons (GHL 125 tons) respectively. The Inner Alitak exploratory unit had a harvest of 17 tons. The four remaining management units within this district had no harvest. The Alitak District total GHL was 660 tons, and 373 tons were harvested. Seine gear harvested 88% of the harvest and gillnet gear 12%.

Eastside District. The R/V Resolution deployed a two person ADF&G field crew at Amee Bay within the East Sitkalidak management unit (Figure 11). This crew was equipped with a 21 foot skiff which enabled them to monitor seven management units along the eastside of Kodiak Island. Approximately 30 gillnet and 15 seine vessels were present within this district at the start of the

season. A raft equipped crew was also flown into Kiliuda Bay. On April 28 the Outer Kiliuda Bay management unit (GHL 80 tons) was closed with a harvest of 133 tons. The Inner Kiliuda Bay and Shearwater Bay management units were closed on May 2 with harvests of 83 tons, (GHL 80 tons), and 112 tons, (GHL 90 tons), respectively. The Kiliuda field crew was moved to the Alitak District while another raft equipped crew was placed in the Inner Ugak Bay management unit. The Tanginak Anchorage management unit was closed on May 8 with a harvest of 16 tons (GHL 15 tons). The Barling Bay management unit was closed on May 13 with a harvest 56 tons, (GHL 50 tons). The Outer Ugak Bay management unit was closed on May 17 with a harvest of 135 tons, (GHL 60 tons). The East Sitkalidak Strait management unit GHL was adjusted up an additional 100 tons inseason due to better than anticipated spawning biomass. This unit was closed on May 24 with a harvest of 391 tons (adjusted GHL 390 tons). Of the 14 management units with GHL's in the Eastside District, six units were closed with assistance of field crews, one unit was closed by the ADF&G office staff, and the remaining units were open until June 30. The total GHL for the Eastside District was 1,265 tons. A total of 1,147 tons were actually harvested, with 56% of the harvest from purse seine gear and 44% of the harvest from gillnet gear.

Northeast District. There are five management units in the Northeast District and four have GHL's (Figure 12). The Woman's Bay management unit had the only harvest this season of 9 tons from gillnet gear, (GHL 100 tons). These management units were open through June 30.

Inner Marmot District. There are five management units within the Inner Marmot District and three have GHL's (Figure 8). The Anton Larsen Bay management unit was closed prior to the start of the season due to low stock abundance. The Kizhuyak Bay management unit had the only harvest (14 tons), GHL of 15 tons. Seine gear and gillnet gear accounted for 35% and 65%, respectively, of the total district harvest.

North Mainland District. The North Mainland District is comprised of four management units. One unit has a GHL, two units are exploratory, and one unit is offshore. The offshore unit is not expected to produce a sac roe harvest (Figure 13). The three Mainland Districts experience more extreme weather conditions than the other districts around Kodiak and Afognak Islands. Sea conditions encountered while crossing the Shelikof Strait to reach these districts greatly reduces the mobility of vessels fishing this district. The Mainland Districts frequently experience high winds, low ceilings, and limited visibility, greatly limiting the effectiveness of spotters. Fishing effort in these three districts generally involves only one or two seine combines and 5-10 gillnet vessels annually.

No field crews are stationed in these districts due to the high expense of placing and supplying crews in this remote area. The weather conditions, combined with the small number of vessels which fish these units reduces the likelihood that excessive harvests will occur. A total of 26 tons were harvested by gillnetters from the Inner Kukak Bay management unit (GHL 65 tons). There were no other harvest from this district.

Mid-Mainland District. The Mid-Mainland District is comprised of six management units. Two units have a GHL, two units are exploratory, and two units are offshore. The offshore units are not expected to produce a sac roe harvest (Figure 14). The Inner Katmai management unit (GHL 65 tons) had the only harvest of 21 tons, from seine gear.

South Mainland District. The South Mainland District consists of two management units, one has a GHL and the second is an exploratory unit (Figure 15). These two management units on the southern part of this district are the farthest units from the port of Kodiak. A total of 55 tons were harvested with seine gear from the Wide Bay management unit (GHL 125 tons).

Sturgeon/Halibut District. The Sturgeon/Halibut District on the southwest portion of Kodiak Island has no management units or GHL and consists mostly of offshore areas that are not likely to produce a sac roe herring harvest (Figure 14).

Age Composition, Weights, and Lengths

During the 1995 season, age-7 herring were the dominant age class (37%) found in the purse seine harvest, (Figure 16). The remaining age classes represented the following percentages of the harvest: age-3 (3%), age-4 (16%), age-5 (9%), age-6 (2%), and age-8 (28%) and Age-9-11+ (5%). In general, the West Afognak and Uganik Districts had a dominance of age-7 herring while the Eastside District management units had a dominance of age-8 herring (Figure 17 and Table 5).

Age-3 herring are considered "recruit herring", entering into the commercial fishery and spawning for the first time. When compared to previous brood years, age-3 herring showed a decrease in average weight in the 1991 harvest. This trend continued in 1992-1995 when these fish were harvested as age-4-7 respectively, being the smallest by age observed in this fishery (Table 6). This reduction in weight coincides with the increase in biomass for most KMA herring stocks.

All other age classes in the 1995 fishery had comparable growth rates to the past five years (Table 7 and 8).

Spawning Biomass

In 1995 the spawning biomass index for that portion of the KMA fished was estimated to range from 37,000 to 47,000 tons, as determined by industry spotter and ADF&G surveys. This is the third highest biomass estimate recorded for this fishery from 1979-1994. Since 1988 the indexed biomass has increased dramatically from 5,500 tons to 15,500 tons in 1990 and doubled by 1992 to 32,000 tons. A breakdown by district where data is available includes; 10,000-12,000 tons in the West Afognak District, 10,000-12,000 tons in the Eastside District, 11,000-14,000 tons in the Uganik District, 4,000-6,000 tons in the Alitak District, and 2,000-3,000 tons in the Mainland Districts. The sac roe herring harvest of 4,604 tons represents a total indexed exploitation rate ranging from 10% to 12% of the spawning biomass.

These exploitation rates should be qualified, since surveys represent an unknown and undoubtedly highly variable proportion of the actual biomass. These exploitation rates can be used for trend evaluation, but should not be compared to the spawning biomass indices achieved by ADF&G in Prince William Sound, Cook Inlet, and Bristol Bay. These areas have a relatively large biomass available for aerial indexing and the observed biomass is annually less variable, so there is more opportunity for observing a greater and more consistent proportion of the actual total biomass. The exploitation rates achieved in these fisheries would be more comparable between areas.

Enforcement Issues

The Alaska Department of Public Safety, Fish and Wildlife Protection (FWP) substantially increased their enforcement coverage of the KMA herring fishery for the 1995 season. As previously mentioned, the FWP vessel M/V Trooper worked jointly with ADF&G in monitoring the fishery and conducting enforcement work, with an ADF&G biologist onboard. Additionally, the FWP vessel M/V Spiridon and a FWP float equipped Cessna 185 provided surveillance of the fishery.

The presence of FWP greatly reduced the burden on ADF&G field crews, especially during openings and emergency closures. Enforcement activity also focused on purse seine length and depth which resulted in three seines being confiscated. The updated descriptions of management units using the 1983 datum marine charts eliminated the discrepancies between the descriptions of areas and the marine charts that was experienced in the 1994 fishery. As previously mentioned, there were some problems with enforcing management unit boundaries at night by ADF&G staff when FWP was not present. It is hoped that FWP will continue this level of enforcement activity which contributed to a more orderly fishery.

1996 Management Plans and Issues

Based on the age class data collected in 1995 and the high biomass estimates for the past four years, the preliminary GHL for the KMA in 1996 is 4,000 tons, down from the 1994 GHL of 4,480 tons. The 1996 harvest is expected to target the dominant age-8 and age-9 year old fish which should comprise 50-60% of the harvest. These age compositions, spawn observations, and fishery performances indicate that the Kodiak area biomass should support a stable sac roe fishery over the next few years. Observations of age-2 and -3 herring during the 1995 season indicate a good level of recruitment.

ADF&G will continue to rely greatly on industry spotter pilots, processors, and fishermen to provide information to help manage this fishery. The current harvest strategy has been tested with record harvests and high gear levels during the last four years. The competition between fishers is intense and gear conflicts between fishers occasionally occur. The increase in seine effort levels and the gillnetter's diminishing percentage of the total harvest has created unrest for gillnet permit holders. A report detailing ADF&G concerns associated with the current harvest strategy and proposals for the 1995 BOF meeting was published in September 1995, "Kodiak Management Area Sac Roe Herring Briefing Document" (Gretsch 1995).

HERRING FOOD/BAIT FISHERY

Historical Perspective

The earliest recorded herring harvest for the KMA was in 1912. The herring fishery did not notably expand until the early 1920's when industry came to Kodiak in search of new areas where large herring were available. Large herring were preferred since the initial products were

utilized as food, such as salted and pickled herring, much in demand after World War I. By the late 1920's the demand for herring food products had declined, but demand for reduction products, such as fish meal and oil, increased. During the fishery's peak production years (1934-1950) it was primarily a reduction fishery and yielded tonnages which dwarf current food/bait harvests (Figure 18). During the seventeen year period 1934-1950 the average harvest was 31,600 (Table 9). The primary products were fish meal and oil, which required large quantities of herring. Limited amounts were used for salted food and bait products. Major harvest areas were located in eastern Shelikof Strait and adjacent bays and straits along the west side of Kodiak and Afognak Islands. Quotas and harvest weights were measured by barrels (where 250 lbs. of herring equals one barrel) until 1956 when the unit of measure was changed to short tons. Historically large, approximately 70 foot, "sardine seiner" type vessels were used in conjunction with holding pounds to supply herring to five major reduction plants. In addition, small local seine vessels and gillnets were used for a portion of the food industry delivering to floating and small shore based salting and pickling operations.

From the early 1960's to 1973, there were no harvest quotas or closed seasons. Beginning in 1974, an open fishing season was established between August 1 through February 28; however no regulatory GHL's were in effect until 1979. In 1979 and 1980, the GHL was 12,600 tons for the food and bait season. As a result of the rapidly developing sac roe fishery, the GHL for the food/bait season was reduced to 1,000 tons in 1981 and remained at that level through 1987. Regulatory GHL's for the food/bait herring fishery were replaced with a regulatory harvest strategy in 1988 which was further defined in 1993 to address harvest activities in the Shelikof Strait (Gretsch et al. 1995). From 1965 through 1995 the food/bait harvest has averaged 198 tons (Figure 19).

Fishery Characteristics

The current food/bait herring fishery can be characterized as a secondary commercial fishery on herring concentrations located in Kodiak waters. It is primarily a bait fishery providing a frozen product for longline and crab/cod pot fishers. Effort and harvest levels are at historical lows for the food/bait fishery, while the sac roe fishery supports relatively high levels of effort and harvest. The food/bait fishery is an open-to-entry fishery, while the sac roe fishery has been limited-to-entry since 1981. Existing regulations designate priority status to the sac roe fishery. During the Fall and Winter months of the early 1980's major concentrations of herring were observed in eastern Shelikof Strait and adjacent bays along the west side of Kodiak and Afognak Islands. The biomass exceeded that of known Kodiak spawning stocks. These herring were targeted by food/bait fishers and questions arose concerning the stock of origin of these fish. In 1986, a stock identification study based on scale pattern analysis was performed on herring harvested from a large biomass located in the east part of the Shelikof Strait (Johnson 1988). The study concluded that at least 80% of the East Shelikof herring sampled were of Kamishak Bay spawning stock origins, which is within the Lower Cook Inlet Management Area.

In March 1988, the Alaska State Board of Fisheries allocated not more than two percent of the previous season's total available spawning biomass from Kamishak to be harvested during Kodiak's food/bait herring fishery. For local Kodiak spawning stocks, which are exploited during

the sac roe fishery, the food/bait GHL on those same stocks is 10% of the previous seasons sac roe harvest.

Problems arose from this management plan because it was difficult to assign harvest from the intermixed stocks to Kodiak or Kamishak. This plan was in affect through the 1992/93 season.

1995/96 Harvest Strategy

In November 1992, the Alaska Board of Fisheries approved the Kamishak Bay District Herring Management Plan (5AAC27.465) which outlines criteria for the management of the Kamishak Bay sac roe herring and the Shelikof Strait food/bait fishery (ADF&G 1995). This plan defines allocations to these fisheries based on biomass estimates.

In January 1993 the Alaska Board of Fisheries placed into regulation a harvest strategy defining the criteria for managing the Kodiak food/bait herring fishery (5AAC 27.535). This new strategy combines the Kamishak stock GHL with the Kodiak stock GHL for food/bait management units FB 1, FB 4, and FB 5. When this combined GHL is achieved the Shelikof Strait food and bait management units are closed collectively. This plan alleviates the problem of identifying the spawning stock of a harvest in areas where intermixing may occur.

The allocation of Kamishak Bay herring stocks to the Shelikof Strait food and bait fishery is based on the spawning biomass of age-5 and older herring and not on the biomass of juveniles. The quantity of herring stocks aged four years and younger caught during the food/bait fishery are adjusted to approximate the biomass of a similar number of age-5 herring. Age-4 and younger herring were selected because in the Kamishak spawning stocks, herring are not considered to have attained complete recruitment into the spawning biomass until they have reached age-5.

By regulation, the herring food/bait season extends from August 1 through February 28. The entire KMA is open to continuous fishing on August 1 for all legal gear types, which include purse seine, gillnet and trawl. There are no exclusive gear areas.

During the January 1993 Alaska Board of Fisheries meeting a new regulation was adopted concerning the gear restrictions placed on purse seines. The purse seine specifications were increased to allow nets 150 fathoms in length and 1,625 meshes in depth. Prior to the 1985/86 food/bait season there were no gear restrictions. Restrictions on seine and gillnet gear were imposed for the 1986/87 season. Seine gear was reduced to 100 fathoms and 1,025 meshes. Gillnets were restricted to a length of 150 fathoms. There were no trawl restrictions.

All permit holders and buyers are required to register at the Kodiak ADF&G office prior to fishing or purchasing herring. At that time, management plans are issued and catch reporting procedures and current regulations are reviewed. Each landing is sampled for age, weight, length (AWL) information and skipper interviews are conducted to evaluate which sac roe stocks are being impacted.

1995-96 Season Summary

The 1995-96 allocation for Kamishak herring stocks over wintering in Shelikof Strait was 250 tons. In addition, the GHL for Kodiak stocks in food/bait management units FB 1, FB 4, and FB 5 was 340 tons. The combined GHL for both stocks affected by (5 AAC 27.465) Kamishak Bay District Herring Management Plan was 590 tons.

The Kodiak spawning stocks total GHL was 458 tons, which represents 10% of the previous spring's sac roe harvest on a stock by stock basis. The total GHL for the KMA was 708 tons (250 tons Kamishak allocation and 458 tons Kodiak stocks).

Kodiak's food/bait herring season began August 1, 1995 and remained open until February 28, 1996. Fishing periods were 24 hours per day and seven days a week. Two emergency orders (E.O.'s) were issued, one which established fishing periods and areas open and the second which closed areas to fishing after a harvest had occurred. The East Afognak (Food/Bait unit #3), North Afognak (Food/Bait unit #2), Uyak (Food/Bait unit #5), and the Inner Marmot (Food/Bait unit #10) were closed prior to the start of the food/bait herring season. The sac roe herring stocks within these units have declined during the last four years so these units were closed to prevent further exploitation during the food/bait fishery.

For the 1995-96 season a total 507 tons were harvested in the KMA. Eight vessels and six buyers/processors registered for this fishery. Trawl gear accounted for 66% of the total harvest and purse seine gear 34%. The total exvessel value of this fishery was approximately \$203,000 dollars.

The food/bait management units FB1, FB4, FB11, and FB12 which are affected by the combined harvest of Kodiak-Kamishak herring stocks, were closed on January 4, 1996. As stated in the Kamishak Bay District Herring Management Plan (5 AAC 27.465) the quantity of age-4 and younger herring harvested is adjusted to a similar number of age-5 herring. This adjusted harvest totalled 595 tons (Table 10).

AWL samples along with herring biomass observations from the fishers were obtained upon delivery to the processors. A portion of this years harvest was delivered and processed in Homer.

No biomass surveys were conducted in 1995 on overwintering herring concentrations.

1996-97 Management Plans and Issues

The success of purse seine gear in this fishery during the last three years will likely encourage other seiners to participate next season. Further, it appears that the Prince William Sound food/bait fishery will likely be closed and effort may shift to the KMA fishery. Additional on-grounds monitoring of the fishery will be necessary as gear levels escalate. Improvements in the timeliness of catch reporting may be needed with increasing effort.

HERRING SUBSISTENCE/PERSONAL USE FISHERY

Fishery Characteristics

The subsistence and personal use fishery for herring is regulated only during the sac roe herring fishery season, April 15 through June 30. During this time period, a permit is required for individuals who are not sac roe commercial fishermen to harvest herring. Sac roe commercial fishermen may retain herring from their lawfully taken commercial catch to fulfill their subsistence or personal use needs. Most of the herring caught during this time period are used for bait in commercial longline fisheries. However small amounts are used for food, sport fishing bait, and fertilizer. The conditions of this permit can be seen in Appendix B.

1995 Season Summary

A total of 21 permits were issued in 1995 and 2 were returned with harvest data. The total harvest was 175 pounds from the Alitak District. Generally, most permits are returned during the winter months and the actual harvest will likely be higher than reported at this time.

LITERATURE CITED

- ADF&G (Alaska Department Fish and Game). 1995-96 Commercial herring fishing regulations, 1995-96 edition. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau.
- Gretsch, D., D. Prokopowich, and K. Brennan. 1995. Kodiak management area sac roe herring harvest strategy. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report 4K95-15, Kodiak.
- Gretsch, D. 1995. Kodiak Management Area sac roe herring briefing document. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report 4K95-41, Kodiak.
- Gretsch, D., D. Prokopowich, and K. Brennan. 1995. Kodiak management area commercial food/bait herring fishery harvest strategy 1995/96. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report 4K95-38, Kodiak.
- Johnson, B.A. and C. Burkey, and D. Gaudet. (Draft manuscript 1988). Stock identification of Pacific herring in the bait fishery in Shelikof Strait, Alaska, 1985/86. Alaska Department of Fish and Game, Division of Commercial Fisheries. Juneau.

Table 1. Historical harvest and effort level for the sac roe herring fishery for the Kodiak Management Area, 1964-1995.

YEAR	TONS HARVESTED	SEINE	GILLNET	NUMBER of CO'S	NUMBER OF VESSELS			TOTAL
					TRAWLS	GILLNET	SEINE	
1964	568	568	-	2	0	0	5	5
1965	657	657	-	2	0	0	8	8
1966	2,769	2,769	-	4	0	0	11	11
1967	1,662	1,662	-	4	0	0	5	5
1968	2,001	2,001	-	4	0	0	10	10
1969	1,130	1,130	-	9	0	0	21	21
1970	342	342	-	5	0	0	13	13
1971	284	284	-	2	0	0	4	4
1972	215	215	-	1	0	0	4	4
1973	831	831	-	4	0	0	11	11
1974	868	868	-	4	0	0	26	26
1975	8	8	-	3	0	0	2	2
1976	5	5	-	1	0	0	1	1
1977	338	338	-	3	0	0	11	11
1978	904	881	23	7	2	7	28	35
1979	1,735	1,457	278	8	0	125	57	182
1980	2,383	2,009	374	9	1	109	92	201
1981	2,065	1,596	469	9	0	114	79	193
1982	1,771	1,447	324	6	0	67	45	112
1983	2,318	1,797	521	7	0	64	41	105
1984	2,163	1,691	472	7	0	69	39	108
1985	1,968	1,244	724	7	0	81	34	115
1986	1,558	1,111	447	8	0	71	31	102
1987	2,146	1,591	555	8	0	62	29	91
1988	2,171	1,304	867	6	0	76	33	109
1989	2,249	1,513	736	6	0	83	37	120
1990	2,347	1,644	703	6	0	63	27	90
1991	2,432	1,697	735	6	0	64	32	96
1992	4,283	3,260	1,023	6	0	74	40	114
1993	4,929	4,203	726	6	0	86	41	127
1994	5,893	4,976	917	15	0	57	66	123
1995	4,604	3,837	768	17	0	71	73	144

Table 2. Summary of Commercial Fisheries Entry Commission status of sac roe herring limited entry permits, Kodiak Management Area, 1989-1995.

Gear Type	Year						
	1989	1990	1991	1992	1993	1994	1995 ^a
<i>Gillnet</i>							
Transferable	68	72	74	97	95	99	94
Non-Transferable	<u>44</u>	<u>27</u>	<u>28</u>	<u>11</u>	<u>8</u>	<u>8</u>	<u>5</u>
Total Permits	112	99	102	108	103	107	99
Total Fished	83	63	64	74	86	57	71
<i>Seine</i>							
Transferable	47	47	48	59	66	69	65
Non-Transferable	<u>25</u>	<u>25</u>	<u>22</u>	<u>13</u>	<u>12</u>	<u>14</u>	<u>13</u>
Total Permits	72	72	70	72	78	83	78
Total Fished	37	27	32	40	41	66	73
<i>Combined Totals</i>							
Transferable	115	119	122	156	161	168	159
Non-Transferable	<u>69</u>	<u>52</u>	<u>50</u>	<u>24</u>	<u>20</u>	<u>22</u>	<u>18</u>
Total Permits	184	171	172	180	181	190	177
Total Fished	120	90	96	114	127	123	144

^a This data does not include the number of unrenewed permits which consists of one seine and 11 gillnet permits in 1995.

Table 3. Kodiak sac roe herring fishery summary by year and by gear, 1979-1995.

YEAR	SEASON LENGTH (DAYS)	GUIDELINE HARVEST LEVEL (TONS)	TOTAL HARVEST (TONS)	HARVEST BY GEAR TYPE (TONS)		PERCENT HARVEST BY GEAR TYPE (TONS)		NUMBER OF LANDINGS		NO. UNITS		AVG. \$'S EARNED	
				SEINE	G/N	SEINE	G/N	SEINE	G/N	SEINE	G/N	SEINE	G/N
1979	36	2,400	1,735	1,457	278	84	16	-	-	57	125	38,347	3,333
1980	35	2,400	2,383	2,009	374	84	16	-	-	92	109	14,978	2,573
1981	48	2,400	2,065	1,596	469	77	23	207	406	79	114	14,402	3,471
1982	59	2,400	1,771	1,447	324	82	18	138	191	45	67	17,819	2,719
1983	51	2,400	2,319	1,797	522	78	22	164	284	41	64	35,061	6,520
1984	54	2,400	2,163	1,691	472	78	22	138	212	39	69	34,691	5,467
1985	59	2,000	1,968	1,244	724	63	37	118	348	34	81	32,935	8,039
1986	61	1,690	1,558	1,110	448	71	29	132	385	31	71	34,010	6,002
1987	61	1,640	2,146	1,591	554	74	26	122	411	29	62	54,872	8,945
1988	59	2,065	2,171	1,304	867	60	40	169	555	33	76	51,350	14,837
1989	76	2,415	2,249	1,513	736	67	33	171	627	37	83	34,749	7,537
1990	75	2,375	2,347	1,644	703	70	30	156	544	27	63	51,724	9,652
1991	83	2,510	2,432	1,697	735	70	30	169	587	32	64	45,077	9,762
1992	77	2,720	4,283	3,260	1,023	76	24	185	706	40	74	40,750	6,912
1993	77	3,525	4,929	4,203	726	85	15	237	294	41	86	56,380	4,640
1994	71	4,550	5,893	4,976	917	84	16	285	485	66	57	60,320	12,860
1995	73	4,480	4,604	3,837	767	83	17	280	642	73	71	66,850	13,750
17-YR AVG.	62	2,610	2,766	2,140	626	76	24	157	393	47	79	40,250	7,470

Table 4. Sac roe herring harvest summary listing guideline harvest levels by management unit, harvest in tons by gear type, percentage of harvest by gear type, total harvest, and date the management unit closed for the Kodiak Management Area, 1995.

Stat. Area	Mgmt. Units	Guideline Harvest Level	Purse (Tons)	%	Gillnet (Tons)	%	Total (Tons)	Date Closed
WEST AFOGNAK DISTRICT								
WA10	Raspberry Strait	350 Tons	0	-	3.0	100	3.0	6/30
WA20	Malina Bay	250 Tons	50.0	91	5.1	9	55.1	6/30
WA30	Paramanof Bay	400 Tons	671.8	95	37.2	5	709.0	4/16
WA32	Foul Bay	75 Tons	782.5	98	18.5	2	801.0	4/25
WA40	Devils Inlet	10 Tons	0	-	0	-	0	6/30
WA40	Blue Fox	50 Tons	0	-	0	-	0	6/30
WA50	Offshore W. Afognak ^a	-	0	-	0	-	0	6/30
DISTRICT TOTAL		1,135 Tons	1,504.3	96	63.8	4	1,568.1	
NORTH AFOGNAK DISTRICT								
NA10	Shuyak Island	20 Tons	0	-	0	-	0	6/30
NA20	Delphin Bay	Closed	0	-	0	-	0	-
NA30	Perenosa Bay	Closed	0	-	0	-	0	-
NA40	Seal Bay	Closed	0	-	0	-	0	-
NA50	Tonki Bay	Closed	0	-	0	-	0	-
DISTRICT TOTAL		20 Tons	0	-	0	-	0	-
SOUTH AFOGNAK DISTRICT								
SA10	Izhut Bay	Closed	0	-	0	-	0	-
SA20	Kitoi Bay	Closed	0	-	0	-	0	-
SA30	MacDonalds Lagoon	Closed	0	-	0	-	0	-
SA40	Danger Bay	Closed	0	-	0	-	0	-
SA50	Litnik	Closed	0	-	0	-	0	-
SA60	Duck Bay	Closed	0	-	0	-	0	-
DISTRICT TOTAL		Closed	0	-	0	-	0	-

-Continued-

Table 4. (page 2 of 5)

Stat. Area	Mgmt. Units	Guideline Harvest Level	Purse (Tons)	%	Gillnet (Tons)	%	Total (Tons)	Date Closed
UGANIK DISTRICT								
UG10	Kupreanof	10 Tons	0	-	0	-	0	6/30
UG20	Viekoda	100 Tons	0	-	0	-	0	6/30
UG21	Terror	200 Tons	323.1	90	34.4	10	357.5	4/20
UG30	Village Island	250 Tons	300.5	96	13.4	4	313.9	4/19
UG31	W. Uganik Pass	75 Tons	3.5	18	16.0	82	19.5	6/30
UG32	NE Arm Uganik	30 Tons	77.6	100	0	-	77.6	4/23
UG33	E. Arm Uganik	100 Tons	158.4	89	20.4	11	178.8	4/23
UG34	S. Arm Uganik	150 Tons	368.2	94	24.3	6	392.5	4/21
UG40	Offshore Uganik ^a	-	0	-	0	-	0	6/30
DISTRICT TOTAL		915 TONS	1,231.3	92	108.5	8	1,339.8	
UYAK DISTRICT								
UY10	Offshore Uyak ^a	Closed	0	-	0	-	0	-
UY20	Harvester Island	Closed	0	-	0	-	0	-
UY30	Inner Uyak	Closed	0	-	0	-	0	-
UY31	Larsen Bay	Closed	0	-	0	-	0	-
UY32	Browns Lagoon	Closed	0	-	0	-	0	-
UY40	Zachar Bay	Closed	0	-	0	-	0	-
UY50	Spiridon Bay	Closed	0	-	0	-	0	-
DISTRICT TOTAL		Closed	0	-	0	-	0	-
ALITAK DISTRICT								
AL10	Outer Alitak	(Exploration)	0	-	0	-	0	6/30
AL20	Inner Alitak	(Exploration)	7.6	44	9.7	56	17.3	6/30
AL21	Inner Deadman Bay	150 Tons	10.5	85	1.9	15	12.4	6/30
AL22	Outer Deadman Bay	125 Tons	112.0	95	5.8	5	117.8	6/30
AL30	Sulua Bay	190 Tons	173.6	87	25.5	13	199.1	5/13
AL31	Portage Bay	75 Tons	69.7	90	7.6	10	77.3	6/12
AL40	Lower Olga/Moser Bay	20 Tons	0	-	0	-	0	6/30
AL41	North Upper Olga Bay	10 Tons	0	-	0	-	0	6/30
AL50	Upper Olga Bay	75 Tons	0	-	0	-	0	6/30
AL60	Geese/Twoheaded	15 Tons	0	-	0	-	0	6/30
DISTRICT TOTAL		660 Tons	373.4	88	50.5	12	423.9	

-Continued-

Table 4. (page 3 of 5)

Stat. Area	Mgmt. Units	Guideline Harvest Level	Purse (Tons)	%	Gillnet (Tons)	%	Total (Tons)	Date Closed
STURGEON/HALIBUT DIST.								
SH10	Sturgeon/Halibut	(Exploration)	0	-	0	-	0	6/30
DISTRICT TOTAL		0 Tons	0		0		0	
EASTSIDE DISTRICT								
EA10	Kaiugnak	20 Tons	0	-	0	-	0	6/30
EA20	S.W. Sitkalidak Strait	20 Tons	0	-	0	-	0	6/30
EA21	Three Saints Bay	60 Tons	5.1	-	30.1	-	35.2	6/30
EA22	Newman Bay	40 Tons	0	-	2.4	100	2.4	6/30
EA23	W. Sitkalidak Strait	300 Tons	42.3	40	64.0	60	106.3	6/30
EA24	Barling Bay	50 Tons	28.3	50	28.2	50	56.5	5/13
EA30	E. Sitkalidak St.	290 Tons	152.0	39	238.6	61	390.6	5/24
EA31	Tanginak Anchorage	15 Tons	0	-	15.7	100	15.7	5/8
EA40	Outer Sitkalidak	(Exploration)	0	-	0	-	0	6/30
EA41	Boulder Bay	(Exploration)	0	-	0	-	0	6/30
EA42	Shearwater Bay	90 Tons	47.0	42	65.5	58	112.5	5/2
EA43	Outer Kiliuda Bay	80 Tons	132.7	99	0.1	1	132.8	4/28
EA44	Inner Kiliuda Bay	80 Tons	77.2	92	6.3	8	83.5	5/2
EA50	Outer Ugak Bay	60 Tons	123.1	91	12.1	9	135.2	5/17
EA51	Inner Ugak Bay	120 Tons	32.0	56	24.7	44	56.7	6/30
EA52	Pasagshak Bay	40 Tons	7.0	36	12.7	64	19.7	6/30
DISTRICT TOTAL		1,265 Tons	646.7	56	500.4	44	1,147.1	

-Continued-

Table 4. (page 4 of 5)

Stat. Area	Mgmt. Units	Guideline Harvest Level	Purse (Tons)	%	Gillnet (Tons)	%	Total (Tons)	Date Closed
NORTHEAST DISTRICT								
NE10	Woman's Bay	100 Tons	0	-	9.2	100	9.2	6/30
NE20	Kalsin Bay	15 Tons	0	-	0	-	0	6/30
NE30	Middle Bay	20 Tons	0	-	0	-	0	6/30
NE40	Inshore Chiniak	10 Tons	0	-	0	-	0	6/30
NE50	Offshore Chiniak	(Exploration)	0	-	0	-	0	6/30
DISTRICT TOTAL		145 Tons	0	-	9.2	100	9.2	
INNER MARMOT DISTRICT								
IM10	Monashka Bay	(Exploration)	0	-	0	-	0	6/30
IM20	Anton Larsen Bay	Closed	0	-	0	-	0	-
IM30	Sharatin Bay	10 Tons	0	-	0	-	0	6/30
IM40	Kizhuyak Bay	15 Tons	5.0	35	9.1	65	14.1	6/30
IM50	Spruce Island	10 Tons	0	-	0	-	0	6/30
DISTRICT TOTAL		35 Tons	5.0	35	9.1	65	14.1	
NORTH MAINLAND DISTRICT								
NM10	Hallo Bay	(Exploration)	0	-	0	-	0	6/30
NM20	Inner Kukak Bay	65 Tons	0	-	26.3	100	26.3	6/30
NM30	Outer Kukak Bay ^a	-	0	-	0	-	0	6/30
NM40	Missak Bay	(Exploration)	0	-	0	-	0	6/30
DISTRICT TOTAL		65 Tons	0	-	26.3	100	26.3	
MID MAINLAND DISTRICT								
MM10	Inner Katmai Bay	65 Tons	20.6	100	0	-	20.6	6/30
MM20	Outer Katmai Bay ^a	-	0	-	0	-	0	6/30
MM30	Alinchak Bay	50 Tons	0	-	0	-	0	6/30
MM40	Puale Bay	(Exploration)	0	-	0	-	0	6/30
MM50	Portage Bay	(Exploration)	0	-	0	-	0	6/30
MM60	Outer Portage ^a	-	0	-	0	-	0	6/30
DISTRICT TOTAL		115 Tons	20.6	100	0	-	20.6	

-Continued-

Table 4. (page 5 of 5)

Stat. Area	Mgmt. Units	Guideline Harvest Level	Purse (Tons)	%	Gillnet (Tons)	%	Total (Tons)	Date Closed
<i>SOUTH MAINLAND DISTRICT</i>								
SM10	Wide Bay	125 Tons	55.4	100	0	-	55.4	6/30
SM20	Lower Shelikof	(Exploration)	0	-	0	-	0	6/30
DISTRICT TOTAL		125 Tons	55.4	100	0	-	55.4	
<hr/>								
GRAND TOTAL		4,480 Tons	3,836.7	83	767.8	17	4604.5	

^a These are offshore management units which are not expected to yield herring of sac-roe quality. These units are more applicable to the food/bait fishery. (See Herring Food/Bait Fishery Management Plan.)

Table 5. Age composition, by percent, of sac roe herring stocks, Kodiak Management Area, 1995.^a

Area	Harvest (tons)	Percent at Age										N
		2	3	4	5	6	7	8	9	10	11+	
Malina Bay	55	-	-	5.7	12.5	3.8	62.6	7.9	1.5	1.1	4.9	265
Paramanof Bay	709	-	-	1.8	7.5	1.6	79.2	6.8	.5	-	2.5	438
Foul Bay	801	-	2.8	11.2	8.4	2.4	70.8	2.0	.4	-	2.0	250
Terror Bay	358	-	.8	5.6	11.3	1.6	76.6	1.6	.8	.8	.8	124
Village Islands	314	.6	1.8	6.0	15.0	2.4	70.1	2.4	.6	.6	.6	167
W. Uganik Passage	19	-	-	2.6	-	2.6	41.0	23.1	7.7	2.6	20.5	39
N.E. Arm Uganik	78	-	2.1	15.0	17.1	6.4	51.4	6.4	-	.7	.7	140
E. Arm Uganik	179	-	.7	6.3	17.6	3.5	66.2	4.9	-	-	.7	142
S. Arm Uganik	393	-	3.5	8.3	18.1	1.4	66.7	.7	.7	-	.7	144
Sulua Bay	199	-	-	26.9	9.0	5.1	38.5	20.5	-	-	-	78
Barling Bay	56	1.0	5.6	45.9	5.1	.5	4.1	32.1	1.0	2.0	2.6	196
W. Sitkalidak	106	1.4	3.6	17.3	4.1	.9	9.1	61.4	-	-	2.3	220
E. Sitkalidak	391	.7	6.4	22.6	10.2	.7	17.0	37.8	.5	.5	3.5	548
Outer Kiliuda Bay	133	-	.6	11.4	3.2	.6	13.3	70.3	-	-	.6	158
Inner Kiliuda Bay	84	.6	1.3	12.3	3.5	1.6	7.9	70.4	1.3	.6	.6	318
Shearwater Bay	113	-	6.3	25.6	11.9	1.3	12.5	38.1	1.3	-	3.1	160
Outer Ugak Bay	135	.7	.7	8.3	2.8	3.4	5.5	72.4	2.8	-	3.4	145
Inner Ugak Bay	57	-	-	1.3	1.3	13.0	2.6	74.0	2.6	1.3	3.9	77
Wide Bay	55	-	18.7	65.7	7.8	3.0	3.6	1.2	-	-	-	166
19 Mgmt. Units	4,235	.3	3.2	16.0	8.9	2.2	37.4	28.3	.7	.4	2.3	3,775

^a Of the 32 management units exploited in 1995, samples were collected from 19 (59%). These 19 units yielded 4,235 tons or 92% of the management area's total harvest of 4,604 tons.

Table 6. Comparison of age, weight, and length (AWL) data from the sac roe herring fishery, Kodiak Management Area, 1989-1995.

Year	Age										Total Avg.	N
	2	3	4	5	6	7	8	9	10	11+		
% Age												
1989	.3	7.1	6.2	42.0	19.3	1.0	10.0	4.5	8.5	1.1		3,026
1990	.7	52.0	3.7	3.3	20.4	8.5	.6	3.0	2.6	5.2		7,672
1991	.05	26.3	49.4	2.6	1.4	8.7	5.2	.6	2.7	3.05		5,498
1992	.5	2.9	62.3	26.9	2.0	.7	2.0	1.2	.05	1.4		9,325
1993	.3	8.7	4.5	63.5	18.2	1.2	.2	1.6	.8	1.0		7,396
1994	.1	11.5	11.6	3.8	42.4	24.5	1.9	.7	2.0	1.5		6,965
1995	.3	3.2	16.0	8.9	2.2	37.4	28.3	.7	.4	2.3		3,775
Avg. Weights												
1989	60	85	130	176	224	251	269	271	276	284	199	2,569
1990	52	95	141	167	191	248	229	280	283	290	152	4,885
1991	53	81	137	169	191	221	255	261	301	292	153	4,239
1992	40	87	114	176	201	226	247	284	283	303	140	8,139
1993	58	94	134	144	203	226	226	250	281	310	156	6,852
1994	78	99	129	166	182	251	251	256	282	316	188	6,836
1995	49	109	146	166	200	208	264	270	270	310	209	3,763
Avg. Lengths												
1989	168	185	210	227	247	254	259	259	260	263	235	3,026
1990	158	188	214	226	232	250	245	261	258	260	212	7,671
1991	166	184	215	225	235	244	251	257	266	263	215	5,497
1992	162	194	202	231	240	250	254	264	265	268	214	9,323
1993	161	191	211	216	240	247	244	254	261	264	219	7,394
1994	175	194	211	227	231	253	252	253	259	267	231	6,965
1995	163	201	220	228	241	243	261	264	265	272	242	3,774

Table 7. Average weight in grams, by age, and management unit for the sac roe herring fishery, Kodiak Management Area, 1995.^a

Area	Harvest (tons)	Average Weight at Age											N
		2	3	4	5	6	7	8	9	10	11+	Avg.	
Malina Bay	55	-	-	124	169	192	211	242	282	314	304	209	265
Paramanof Bay	709	-	-	121	161	188	210	222	249	-	271	207	437
Foul Bay	801	-	96	123	164	186	206	230	262	-	279	191	250
Terror Bay	358	-	65	111	162	169	201	226	245	253	261	191	124
Village Islands	314	59	95	138	159	202	194	214	204	348	225	185	167
W. Uganik Passage	19	-	-	160	-	143	201	247	280	255	326	242	39
N.E. Arm Uganik	78	-	125	127	148	165	184	176	-	175	185	166	140
E. Arm Uganik	179	-	94	139	150	162	194	194	-	-	234	181	142
S. Arm Uganik	393	-	88	139	155	150	196	184	217	-	290	180	143
Sulua Bay	199	-	-	143	166	214	215	259	-	-	-	200	77
Barling Bay	56	58	116	154	161	171	228	279	303	241	324	202	194
W. Sitkalidak	106	49	93	148	172	231	229	271	-	-	314	233	220
E. Sitkalidak	391	55	123	156	180	221	236	278	300	251	328	223	547
Outer Kiliuda Bay	133	-	118	160	186	221	239	269	-	-	288	249	158
Inner Kiliuda Bay	84	33	123	160	181	228	235	266	286	296	360	245	318
Shearwater Bay	113	-	129	163	182	231	247	272	281	-	366	224	160
Outer Ugak Bay	135	36	96	142	164	217	231	251	265	-	316	237	139
Inner Ugak Bay	57	-	-	182	161	229	272	250	214	282	325	248	77
Wide Bay	55	-	96	133	164	229	221	251	-	-	-	136	166
19 Mgmt. Units	4,235	49	109	146	166	200	208	264	270	270	310		3,763

^a Of the 32 management units exploited in 1995, samples were collected from 19 (59%). These 19 units yielded 4,235 tons or 92% of the management area's total harvest of 4,604 tons.

Table 8. Average length in millimeters, by age, and management unit, for the sac roe herring fishery, Kodiak Management Area, 1995.^a

Area	Harvest (tons)	Average Length at Age											Avg.	N
		2	3	4	5	6	7	8	9	10	11+			
Malina Bay	55	-	-	210	230	237	244	254	268	271	268	243	265	
Paramanof Bay	709	-	-	209	226	236	242	247	256	-	258	241	438	
Foul Bay	801	-	195	213	231	244	244	256	267	-	262	239	250	
Terror Bay	358	-	181	205	232	233	243	251	263	265	258	240	124	
Village Islands	314	177	188	216	222	242	236	239	250	275	249	232	167	
W. Uganik Passage	19	-	-	228	-	231	245	257	267	255	274	255	39	
N.E. Arm Uganik	78	-	200	211	220	229	236	235	-	240	237	228	140	
E. Arm Uganik	179	-	201	219	225	226	236	242	-	-	247	233	142	
S. Arm Uganik	393	-	187	213	222	217	236	233	264	-	266	230	144	
Sulua Bay	199	-	-	224	229	252	250	261	-	-	-	243	78	
Barling Bay	56	172	209	225	231	228	256	266	267	266	282	241	195	
W. Sitkalidak	106	157	194	220	228	249	248	261	-	-	277	248	220	
E. Sitkalidak	391	166	209	224	234	247	257	264	263	264	278	247	548	
Outer Kiliuda Bay	133	-	195	224	231	253	252	259	-	-	260	253	158	
Inner Kiliuda Bay	84	150	207	227	236	255	254	264	266	270	285	256	318	
Shearwater Bay	113	-	216	229	235	251	258	264	274	-	295	249	160	
Outer Ugak Bay	135	155	198	225	224	253	253	259	261	-	278	254	145	
Inner Ugak Bay	57	-	-	231	223	247	261	255	258	268	270	254	77	
Wide Bay	55	-	191	211	226	249	250	257	-	-	-	212	166	
19 Mgmt. Units	4,235	163	201	220	228	241	243	261	264	265	272		3,774	

^a Of the 32 management units exploited in 1995, samples were collected from 19 (59%). These 19 units yielded 4,235 tons or 92% of the management area's total harvest of 4,604 tons.

Table 9. Historical food/bait herring harvest for the Kodiak Management Area, 1912-1995.

YEAR	TONS	YEAR	TONS	YEAR	TONS
1912	20.0	1940	22677.0	1968	15.4
1913	0.0	1941	40083.5	1969	11.0
1914	0.0	1942	16791.0	1970	7.5
1915	0.0	1943	35352.0	1971	44.2
1916	70.0	1944	26835.0	1972	49.8
1917	137.9	1945	31114.0	1973	178.0
1918	118.4	1946	47505.9	1974	40.1
1919	259.7	1947	50743.0	1975	5.2
1920	45.9	1948	46428.0	1976	No Data
1921	944.9	1949	0.0	1977	No Data
1922	1482.6	1950	44132.5	1978	398.9
1923	321.5	1951	4299.0	1979	124.8
1924	4823.0	1952	1389.0	1980	380.7
1925	9997.0	1953	725.0	1981	18.0
1926	2680.9	1954	0.0	1982	326.0
1927	2592.9	1955	0.0	1983	33.4
1928	625.0	1956	13524.0	1984	123.0
1929	No Data	1957	21218.5	1985	102.0
1930	622.0	1958	1711.0	1986	213.0
1931	1000.0	1959	3831.0	1987	217.1
1932	3594.0	1960	0.0	1988	340.2
1933	2312.5	1961	0.0	1989	344.6
1934	60000.0	1962	0.0	1990	312.6
1935	No Data	1963	0.0	1991	215.3
1936	24748.0	1964	309.8	1992	311.5
1937	27659.3	1965	35.0	1993	837.0
1938	24522.0	1966	198.0	1994	677.0
1939	38600.5	1967	300.3	1995	507.0

Table 10. Commercial food/bait herring age-weight-length summary of harvest for the Shelikof Strait, 1995/96.

Sample Period	Age (years)	Sex			Percent of Total		Weight			Std. Length			Tons	Adj. Tons
		Male	Female	Unknown	Total	Total	Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured		
October 1995 to January 1996	0	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	78	67	4	149	15.3	87	16.3	149	184	9.8	149	34	83
	3	107	92	-	199	20.4	130	20.4	196	206	9.3	199	69	111
	4	31	25	-	56	5.7	166	28.2	55	223	14.7	56	25	31
	5	54	62	-	116	11.9	210	28.4	116	237	9.5	116	65	65
	6	43	34	-	77	7.9	233	28.9	77	244	8.7	77	48	48
	7	135	143	-	278	28.5	250	29.9	274	248	9.3	278	184	184
	8	16	21	-	37	3.8	276	33.5	36	256	10.4	37	27	27
	9	8	4	-	12	1.2	299	30.6	12	264	10.1	12	10	10
	10	11	4	-	15	1.5	293	41.2	14	260	13.3	15	12	12
	11+	21	17	-	38	3.9	335	39.6	38	268	12.7	38	34	34
Period total		504	469	4	977	100.0	195	75.4	967	228	27.7	977	507	605

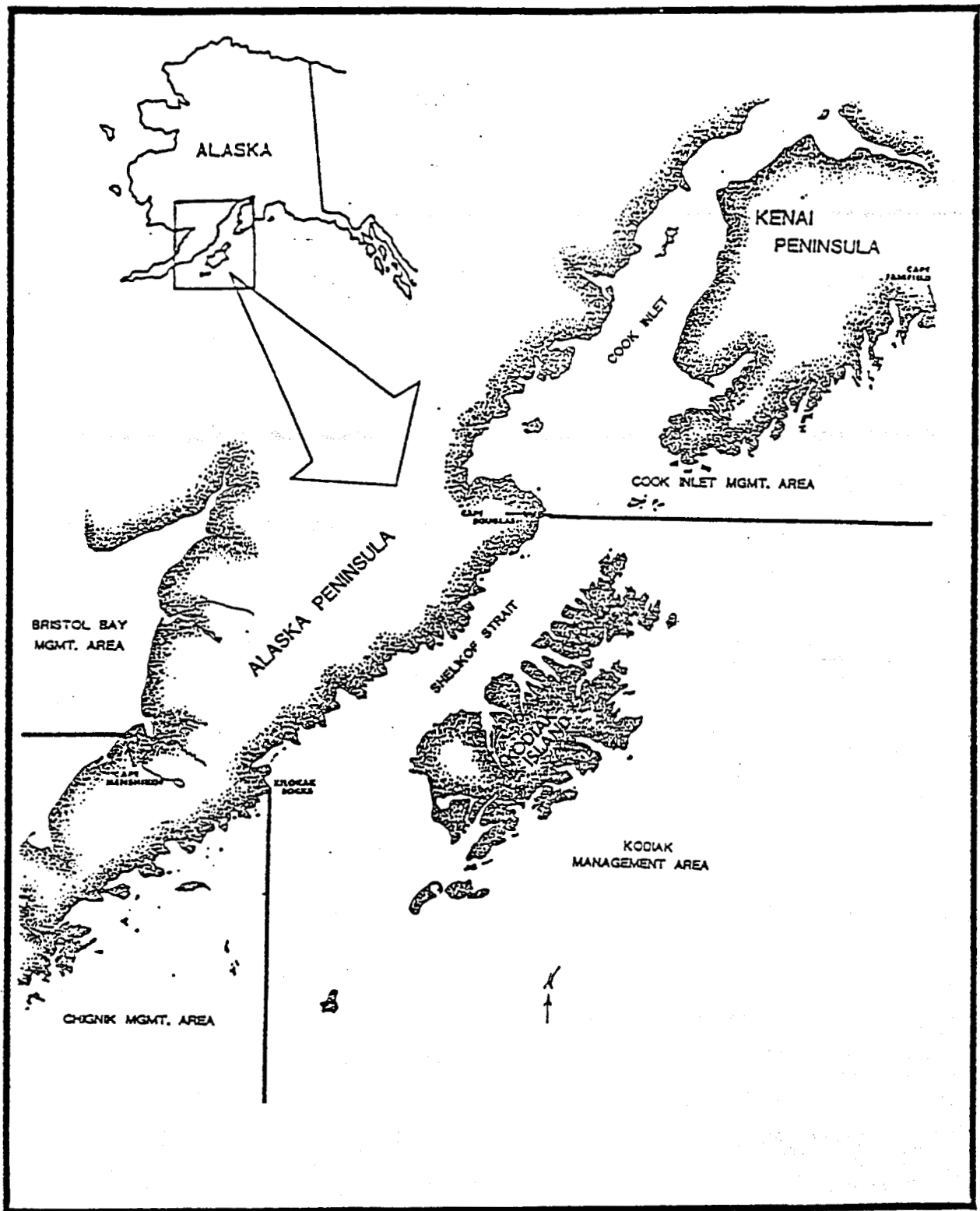


Figure 1. Map of southwestern Alaska emphasizing the Kodiak Management Area and it's relationship to surrounding management areas.

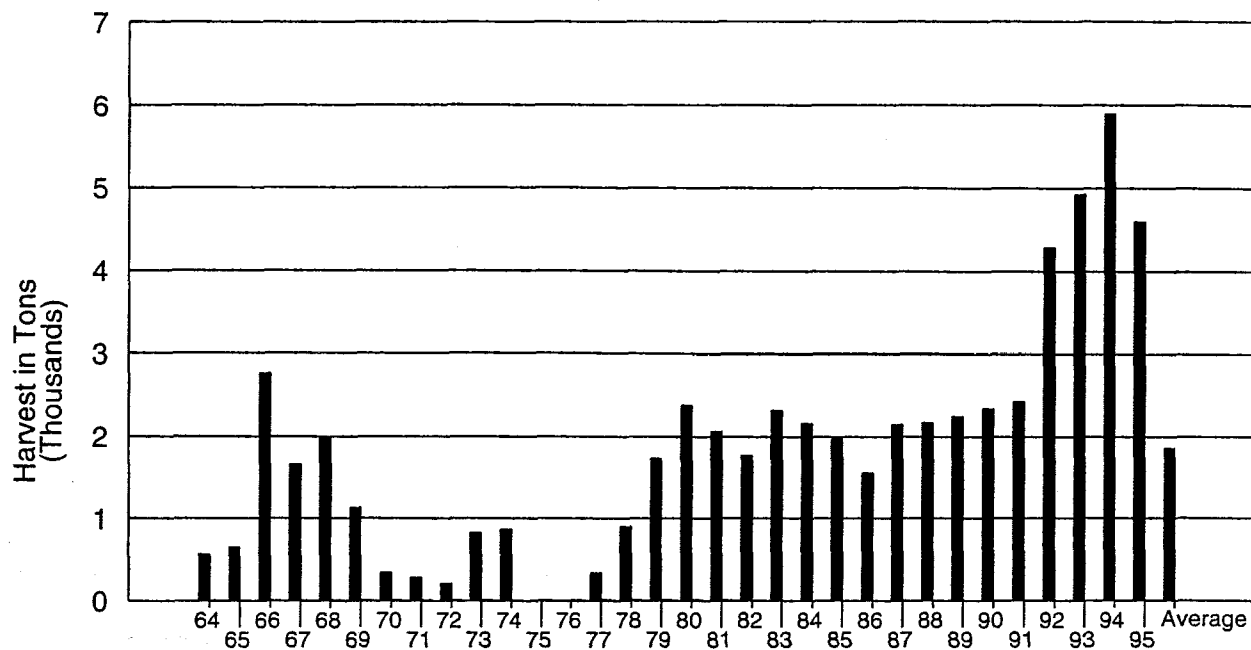


Figure 2. Historic sac roe herring harvest for the Kodiak Management Area, 1964-1995.

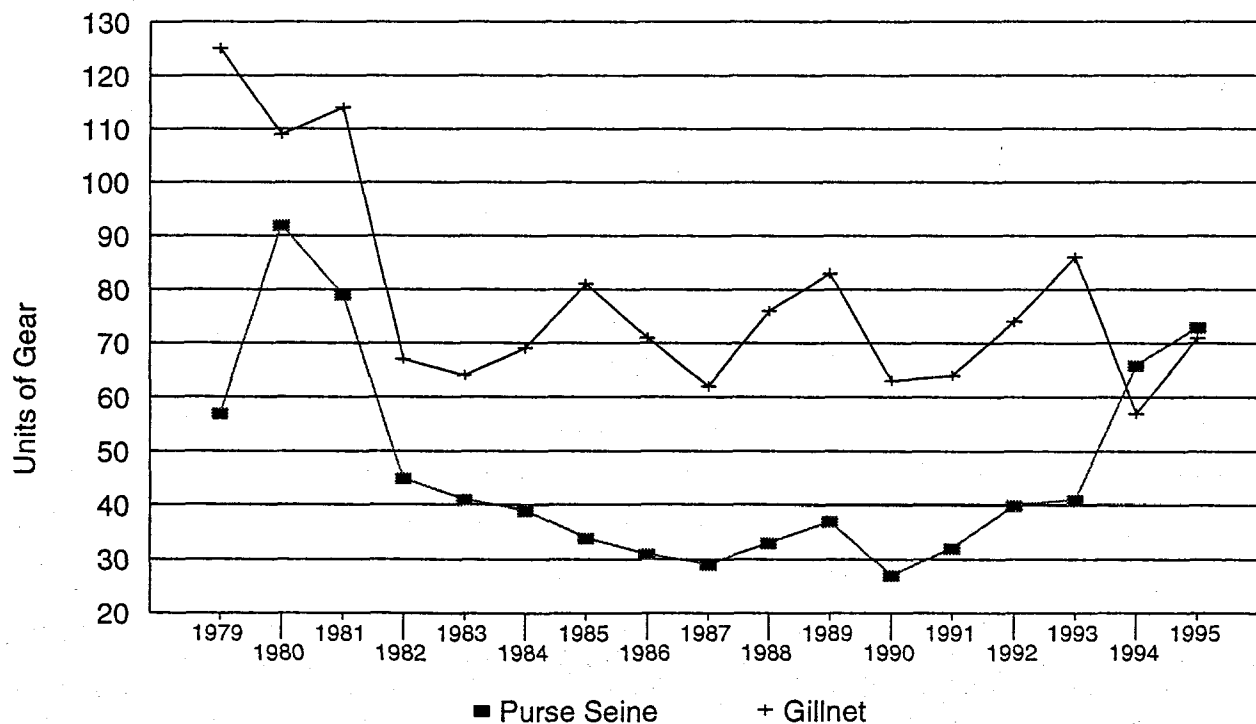


Figure 3. Number of units of each gear type which made landings in the Kodiak Management Area sac roe herring fishery, 1979-1995.

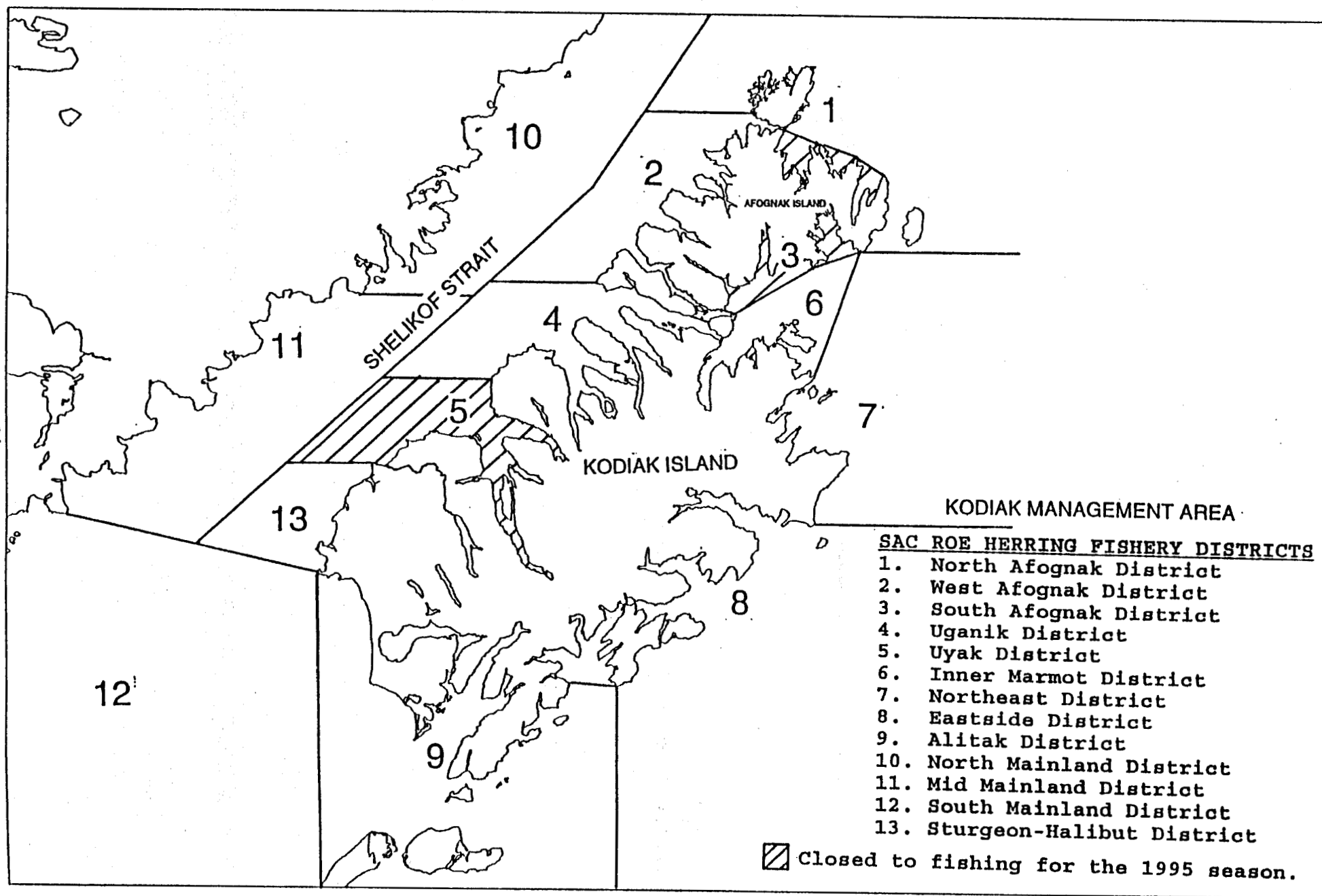


Figure 4. Sac roe herring fishery districts for the Kodiak Management Area, 1995.

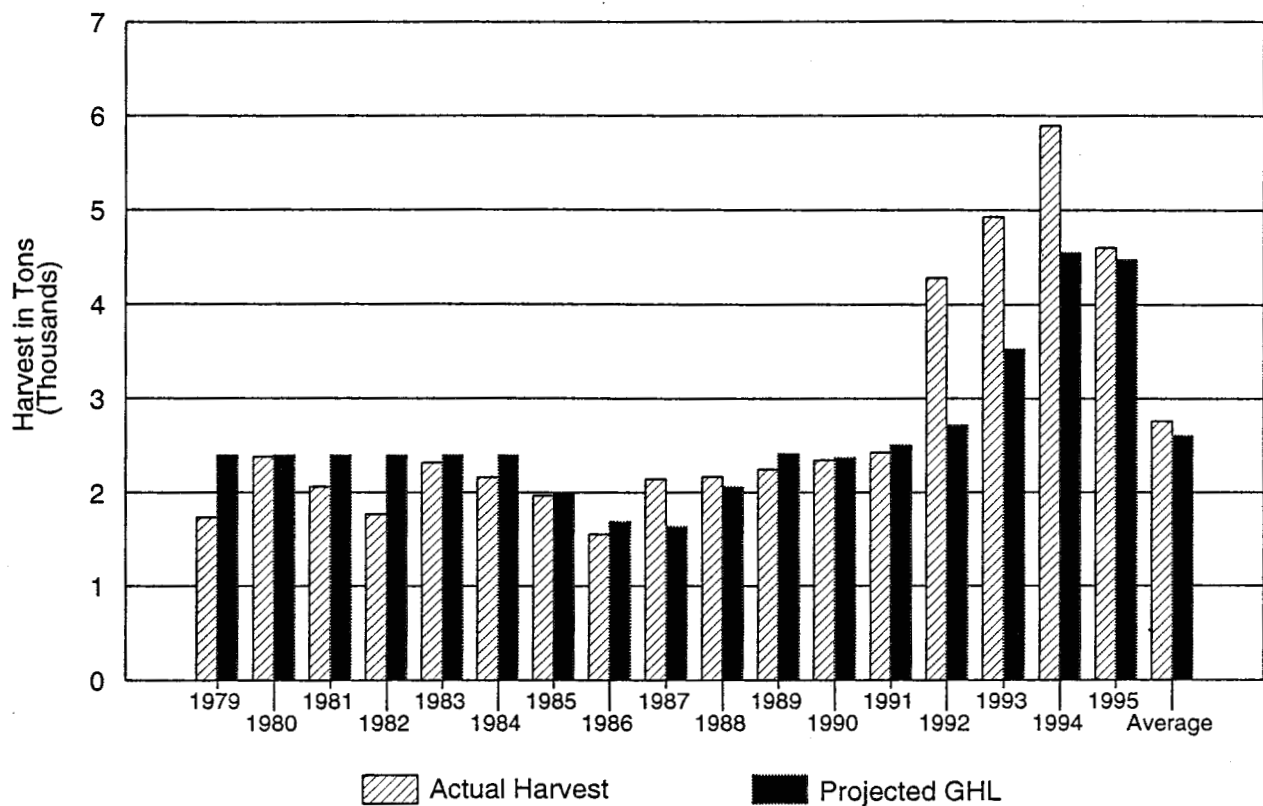


Figure 5. Comparison of the projected guideline harvest level (GHL) to the actual sac roe herring harvest in the Kodiak Management Area, 1979-1995.

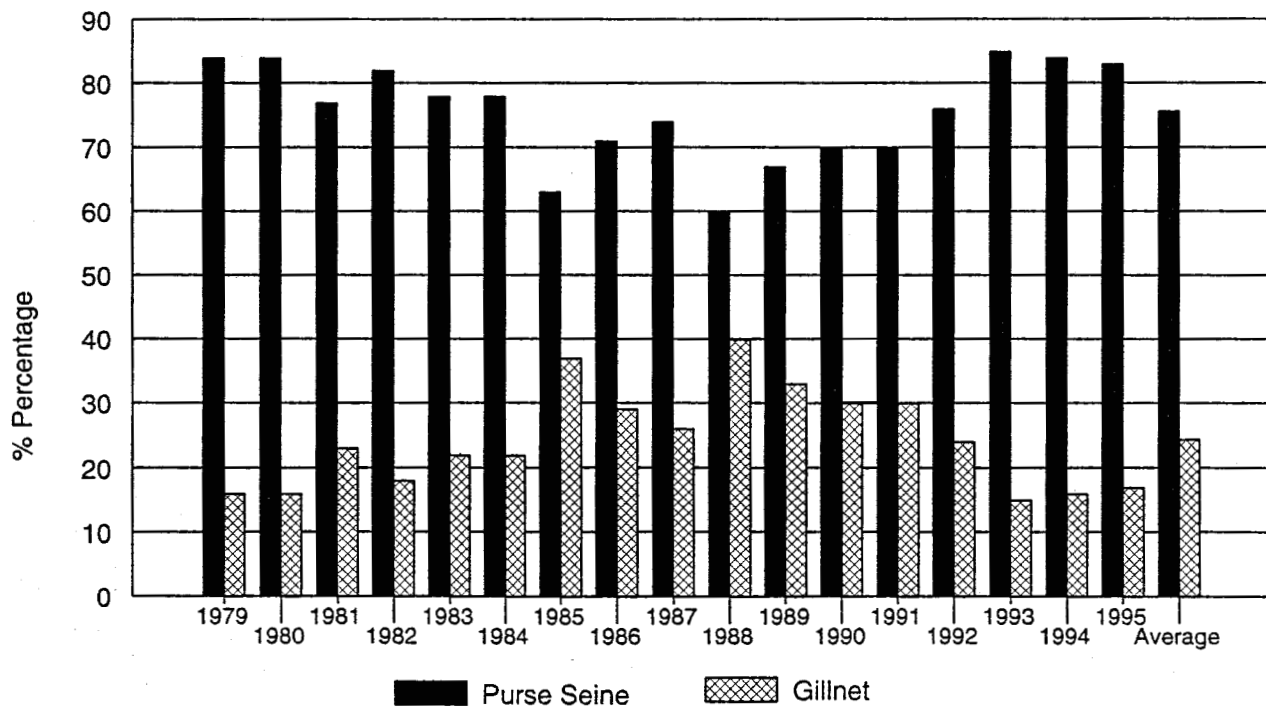


Figure 6. Percent of sac roe herring harvest by gear type for the Kodiak Management Area, 1979-1995.

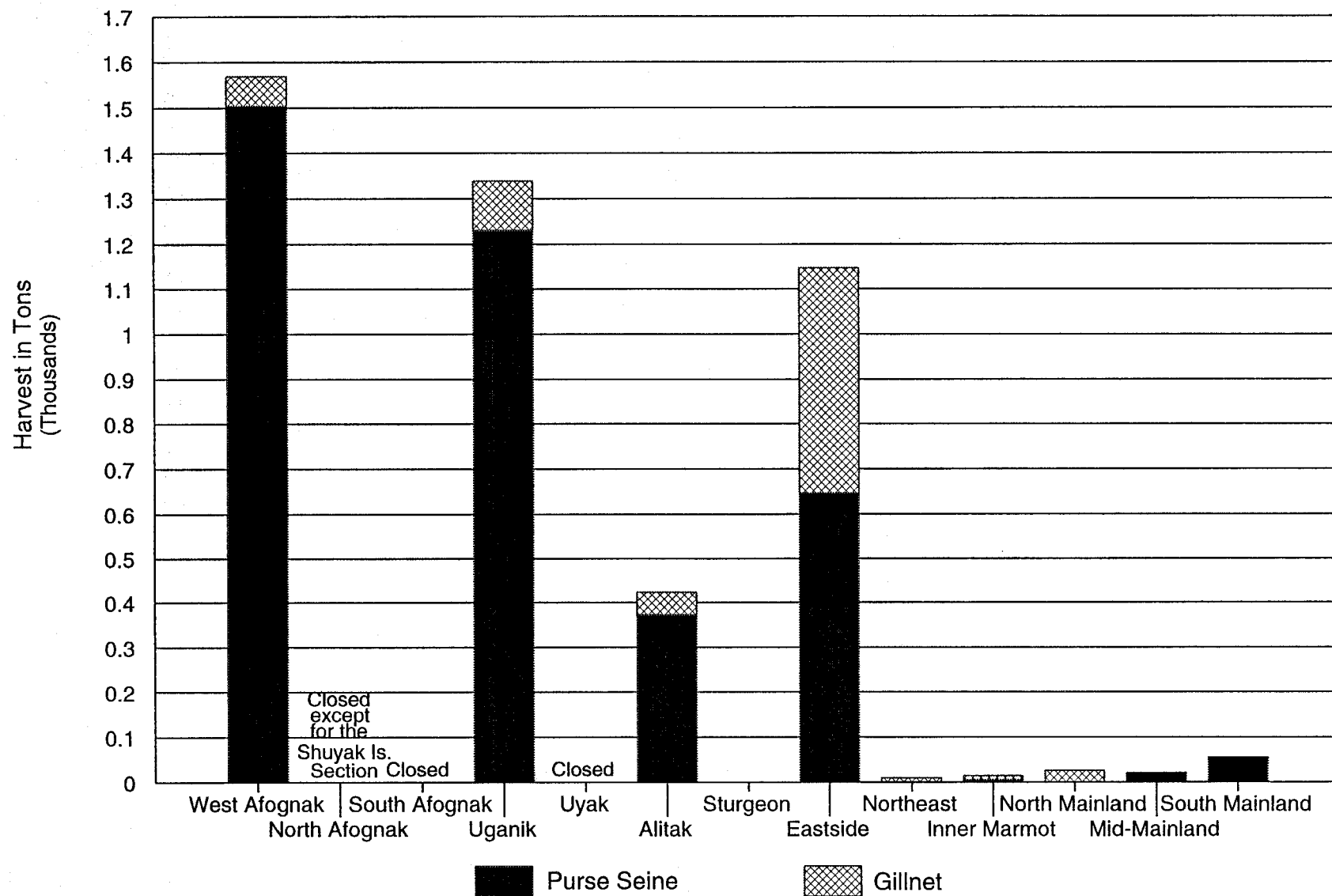


Figure 7. Sac roe herring harvest by district and gear type for the Kodiak Management Area, 1995.

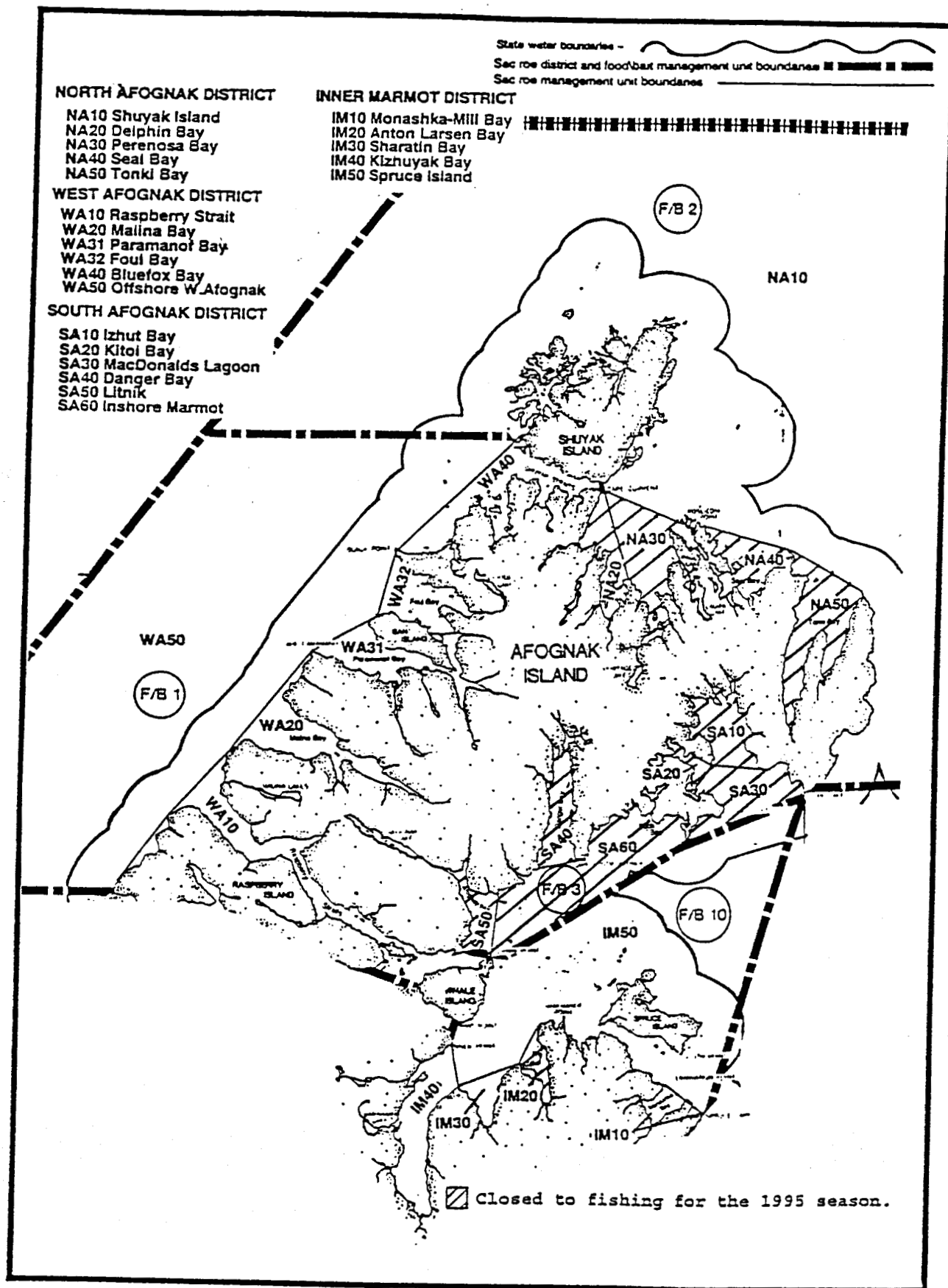


Figure 8. North Afognak, West Afognak, South Afognak, and Inner Marmot Districts and management units for the sac roe herring fishery, Kodiak Management Area, 1995.

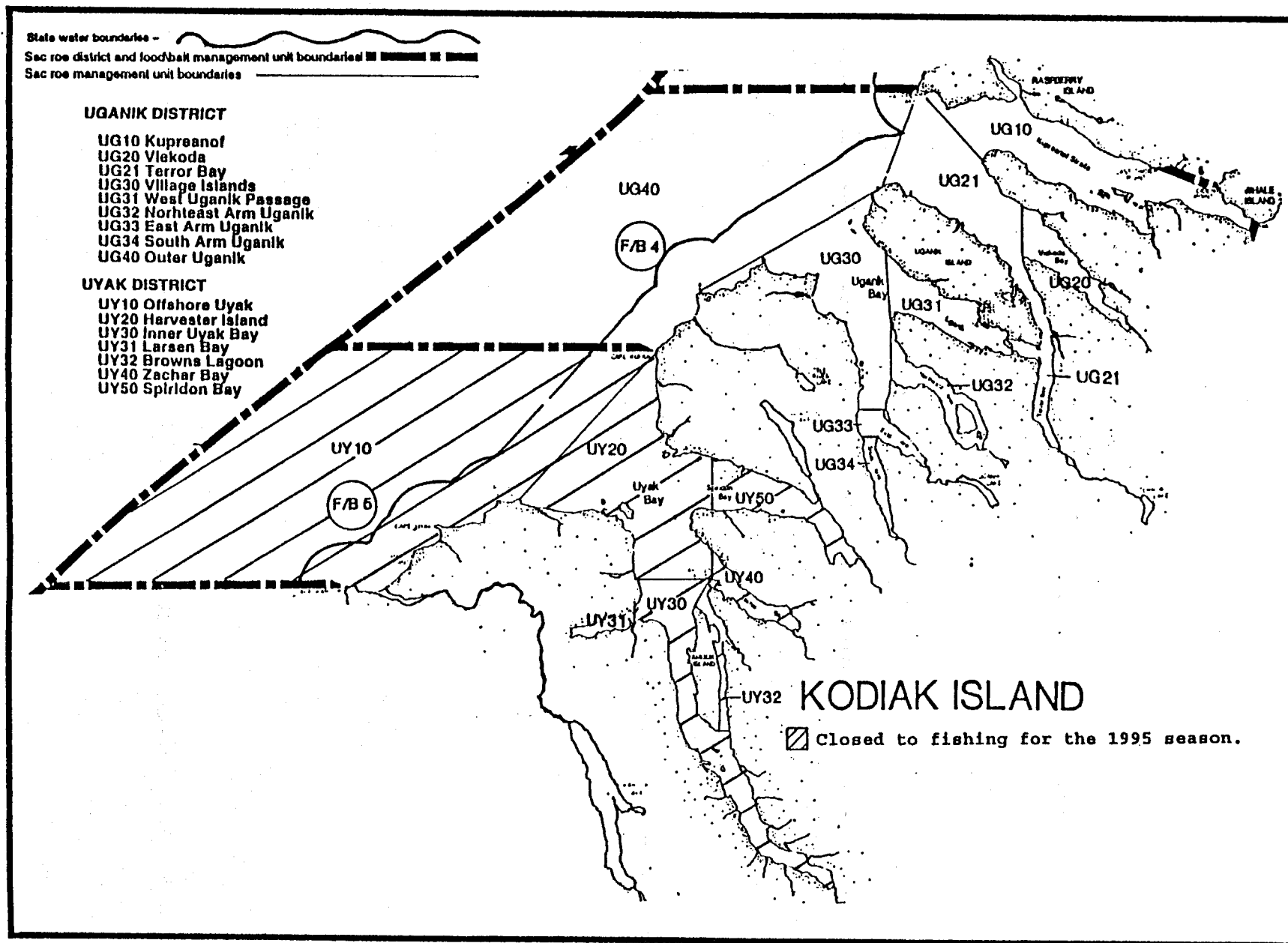


Figure 9. Uganik and Uyak Districts and management units for the sac roe herring fishery, Kodiak Management Area, 1995.

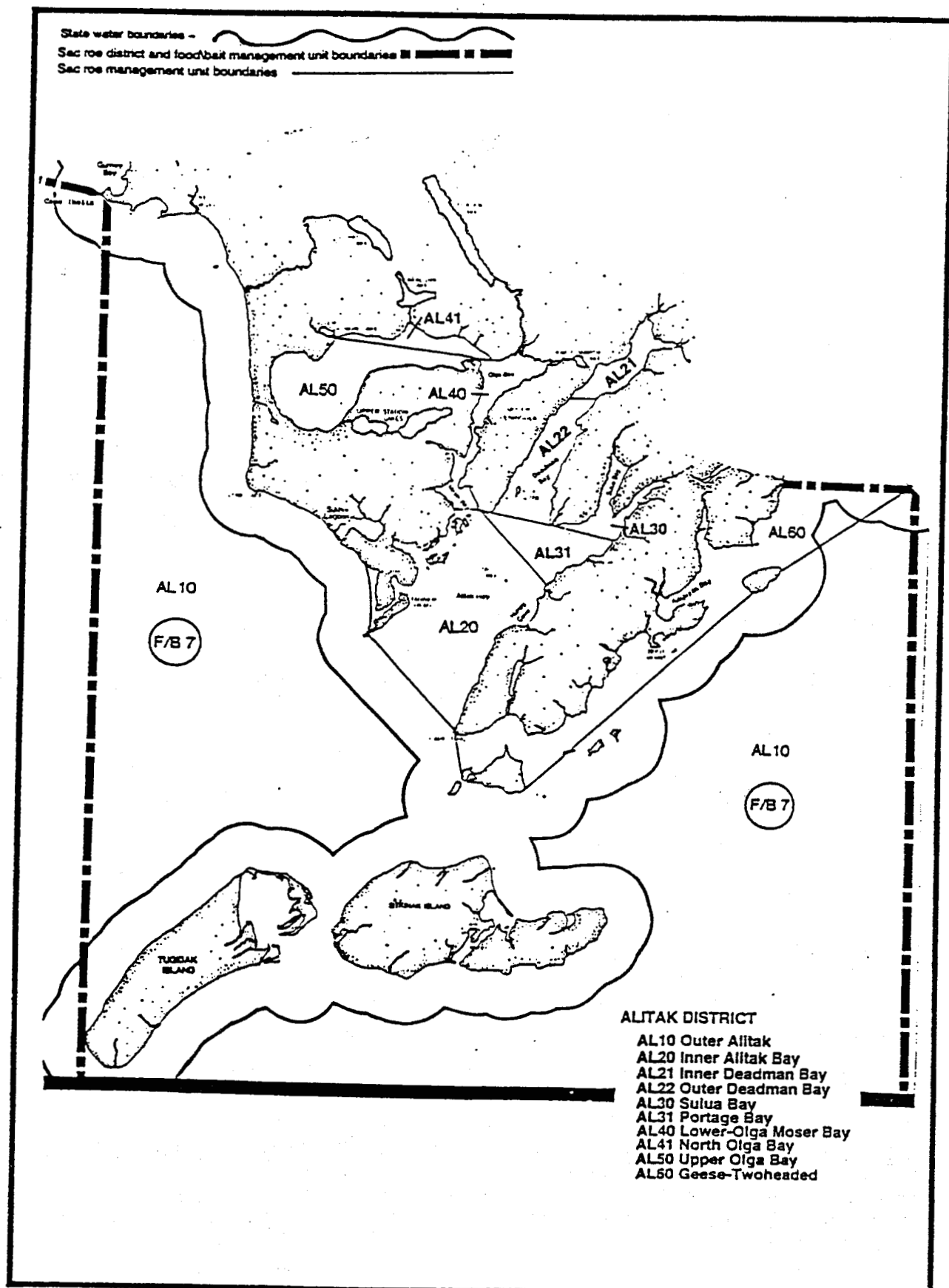


Figure 10. Alitak District and management units for the sac roe herring fishery, Kodiak Management Area, 1995.

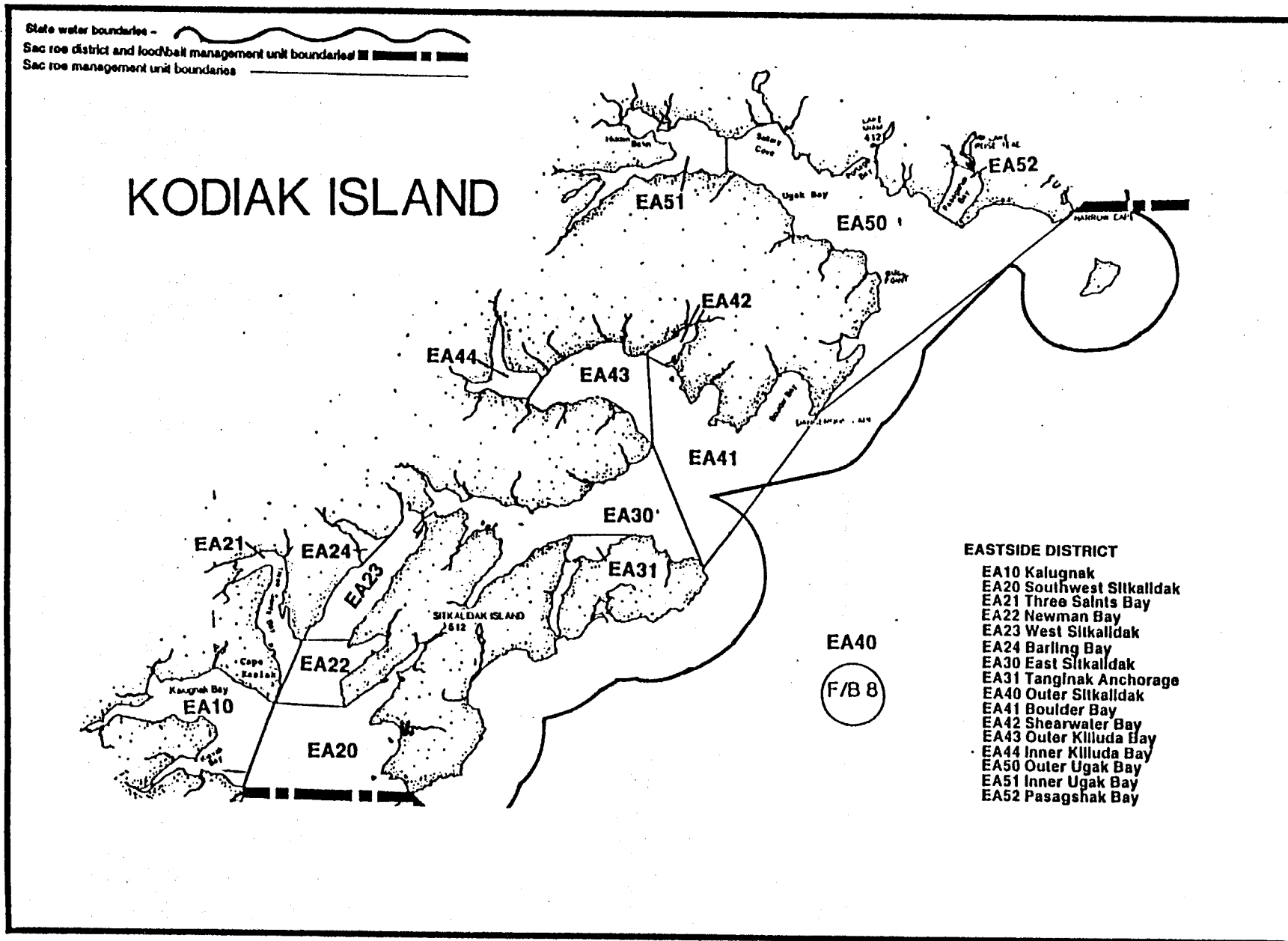


Figure 11. Eastside District and management units for the sac roe herring fishery, Kodiak Management Area, 1995.

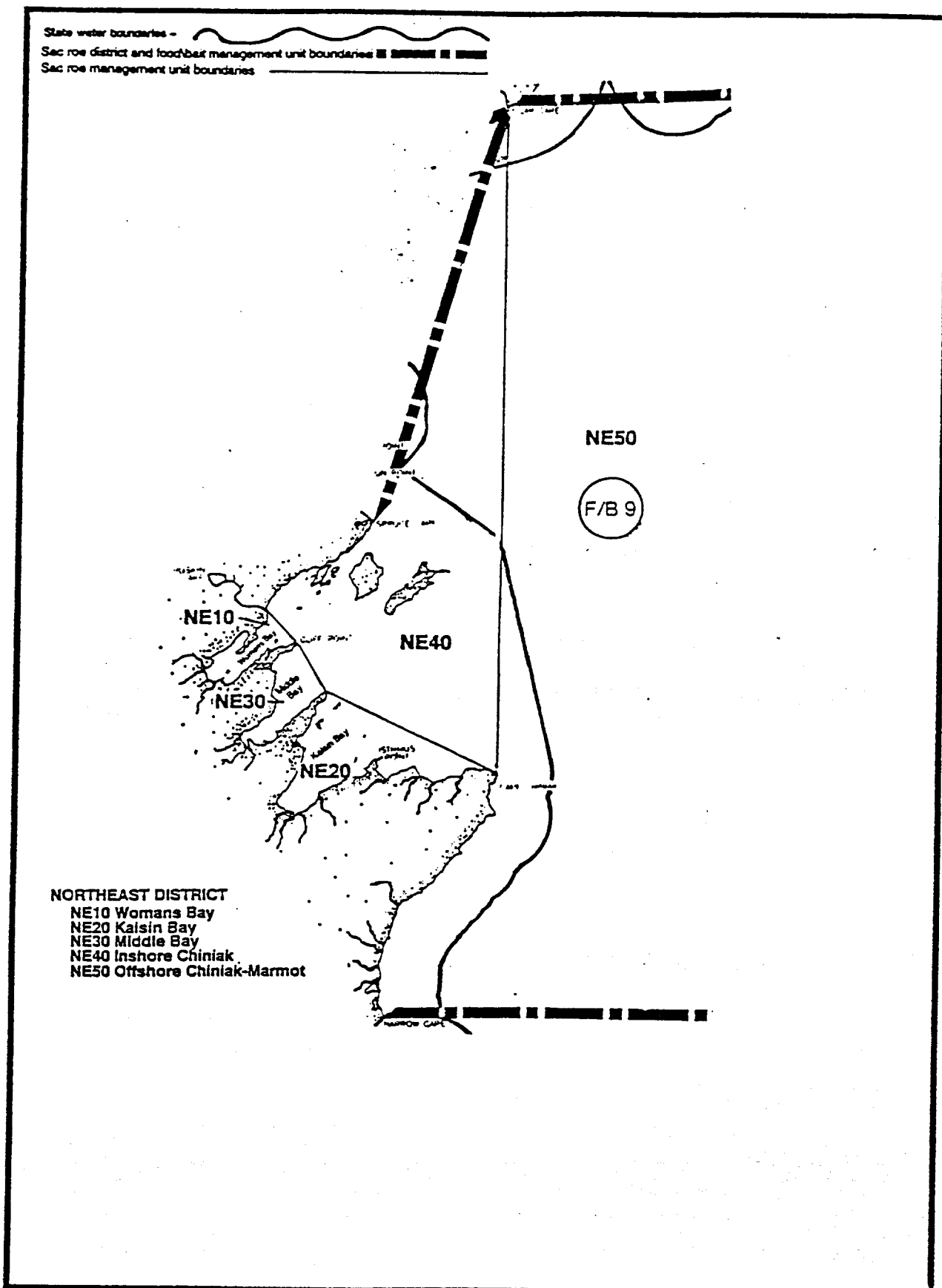


Figure 12. Northeast District and management units for the sac roe herring fishery, Kodiak Management Area, 1995.

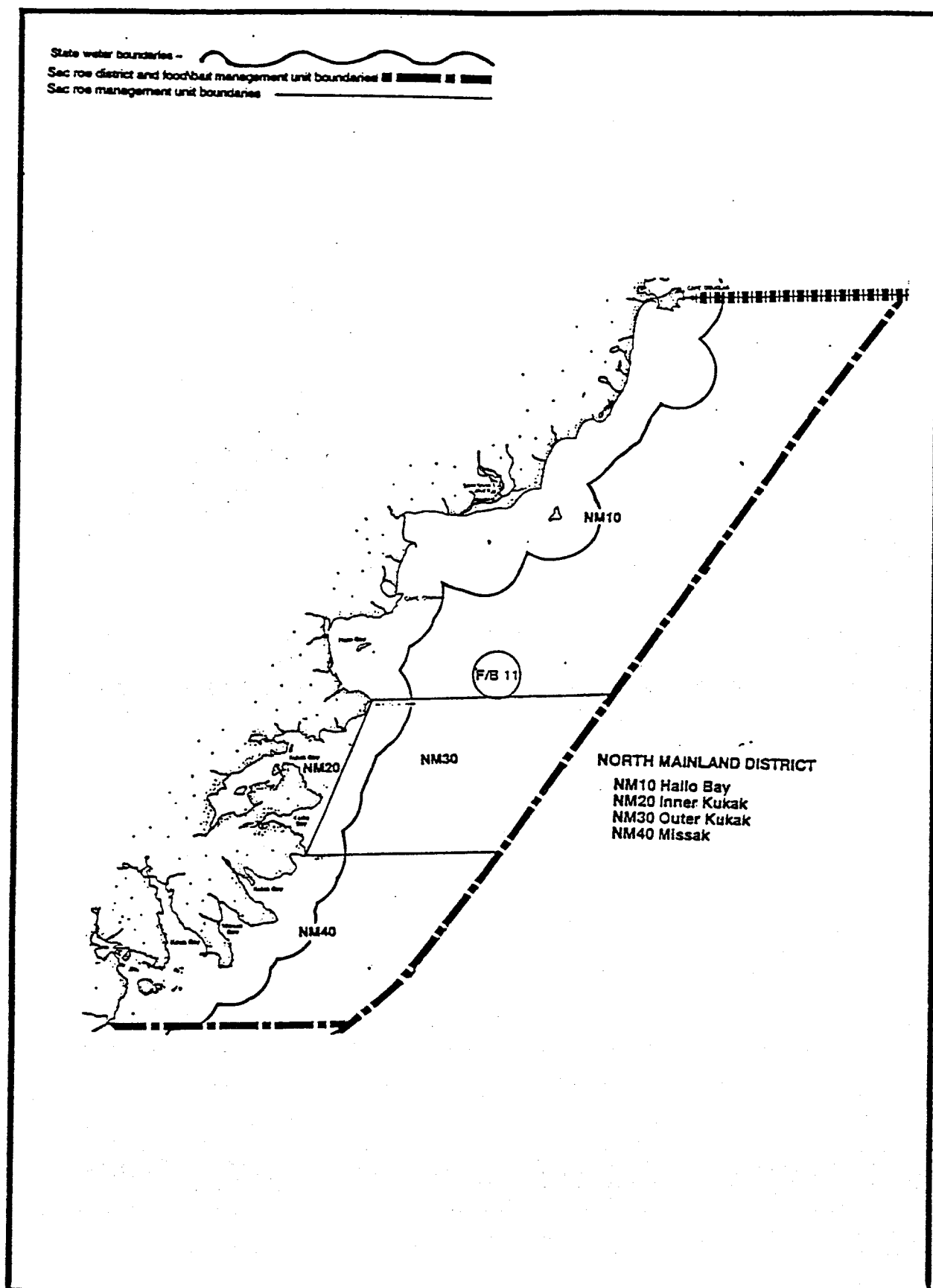


Figure 13. North Mainland District and management units for the sac roe herring fishery, Kodiak Management Area, 1995.

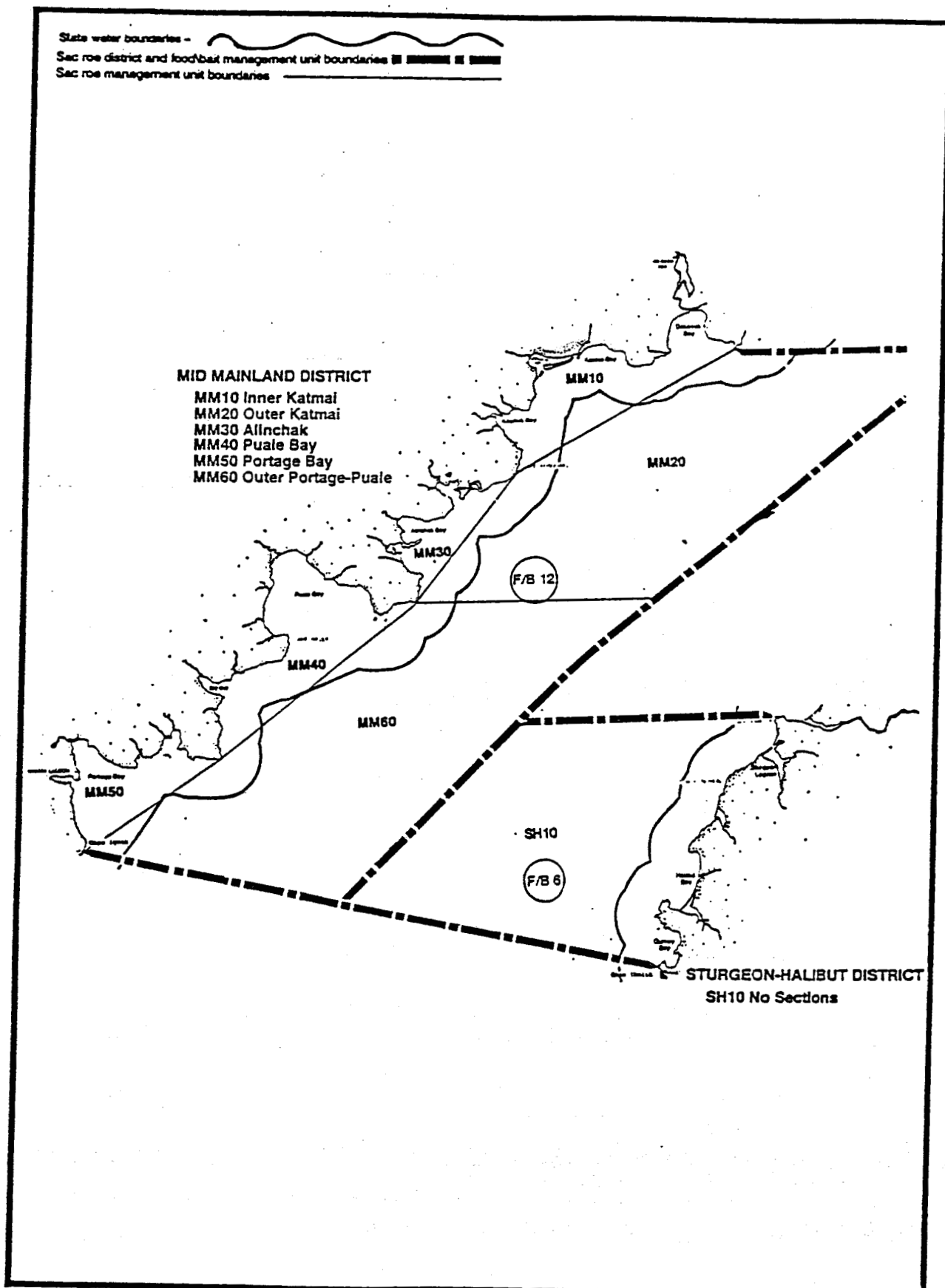


Figure 14. Mid Mainland and Sturgeon-Halibut Districts and management unit for the sac roe herring fishery, Kodiak Management Area, 1995

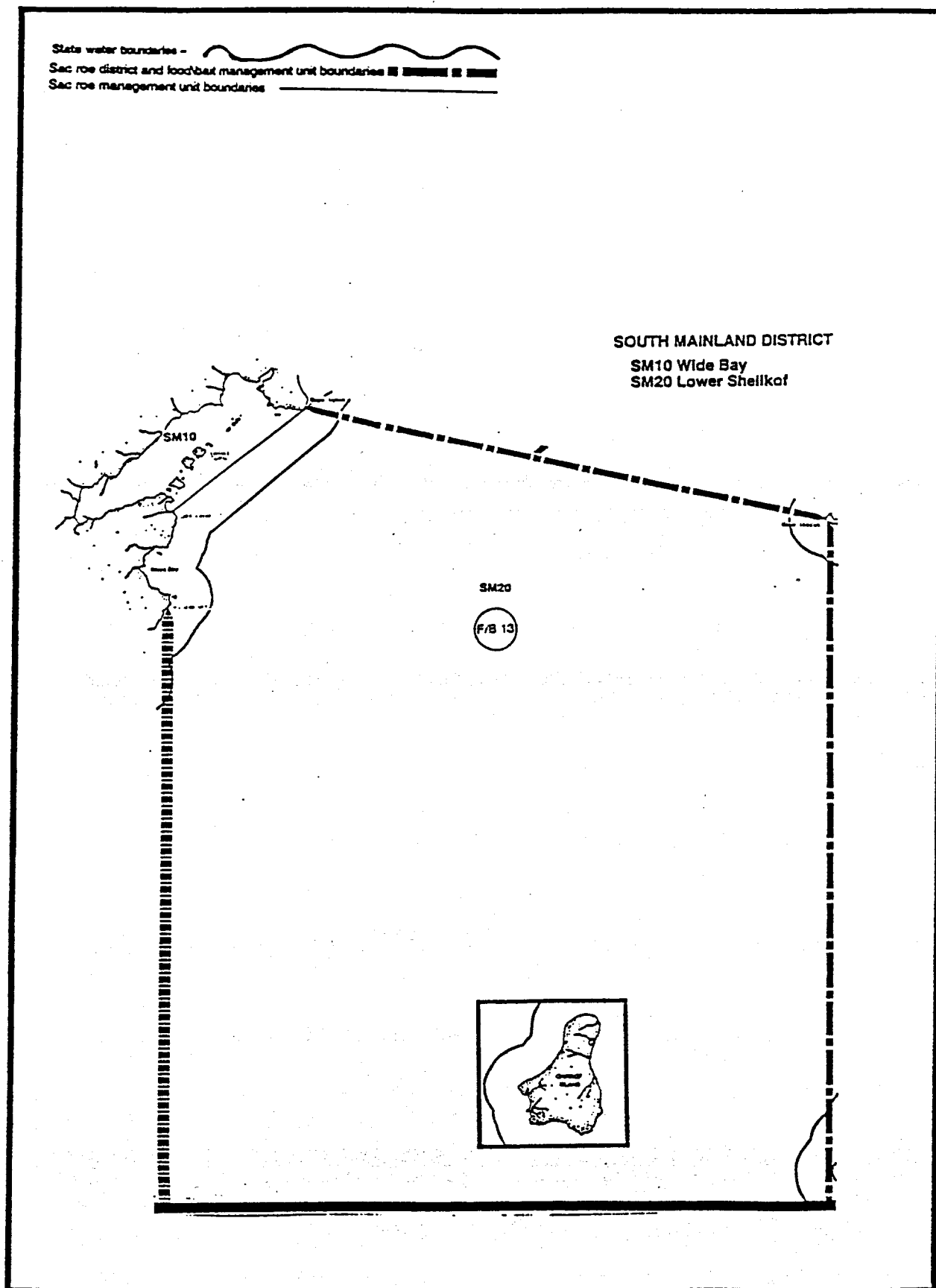


Figure 15. South Mainland District and management units for the sac roe herring fishery, Kodiak Management Area, 1995.

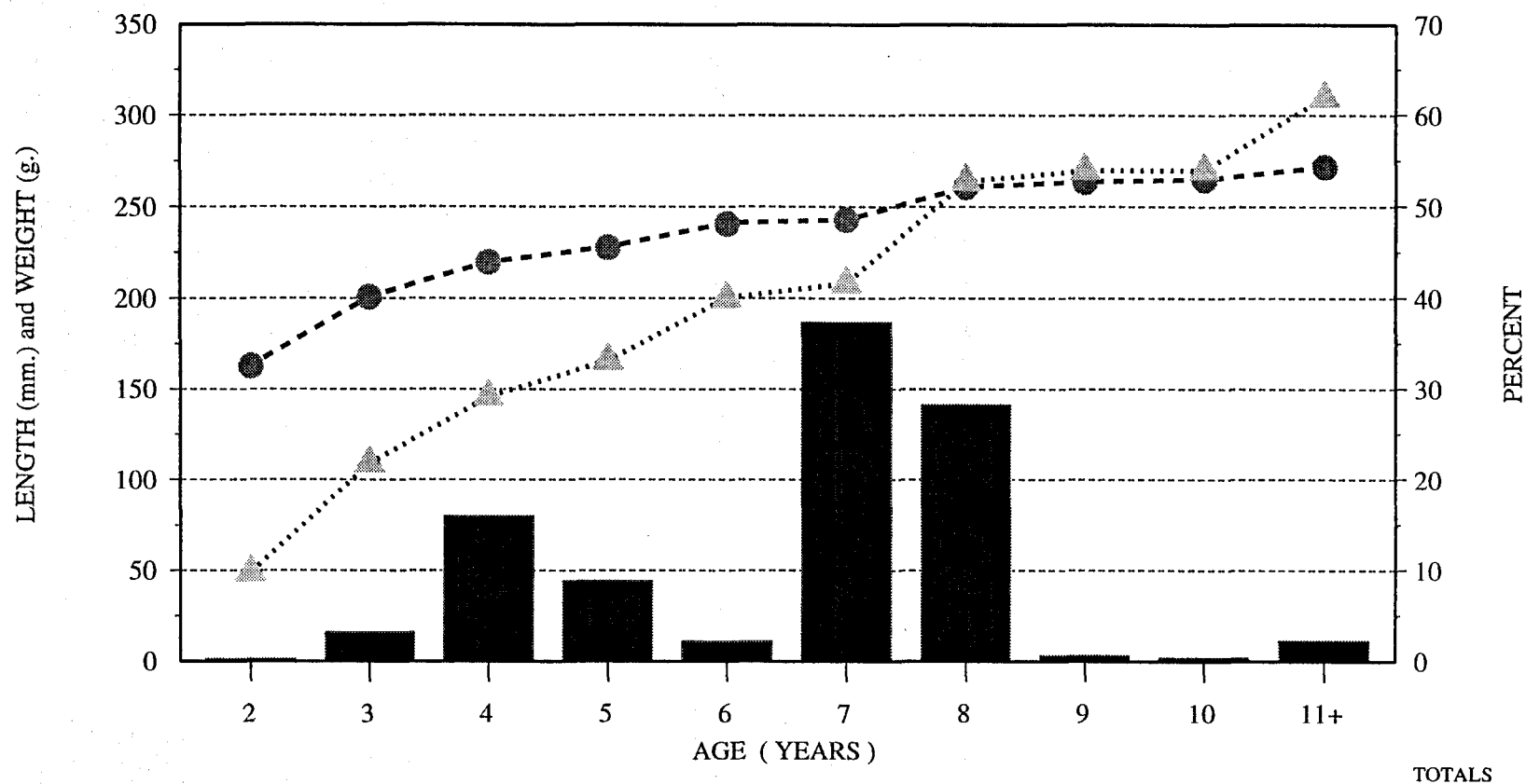
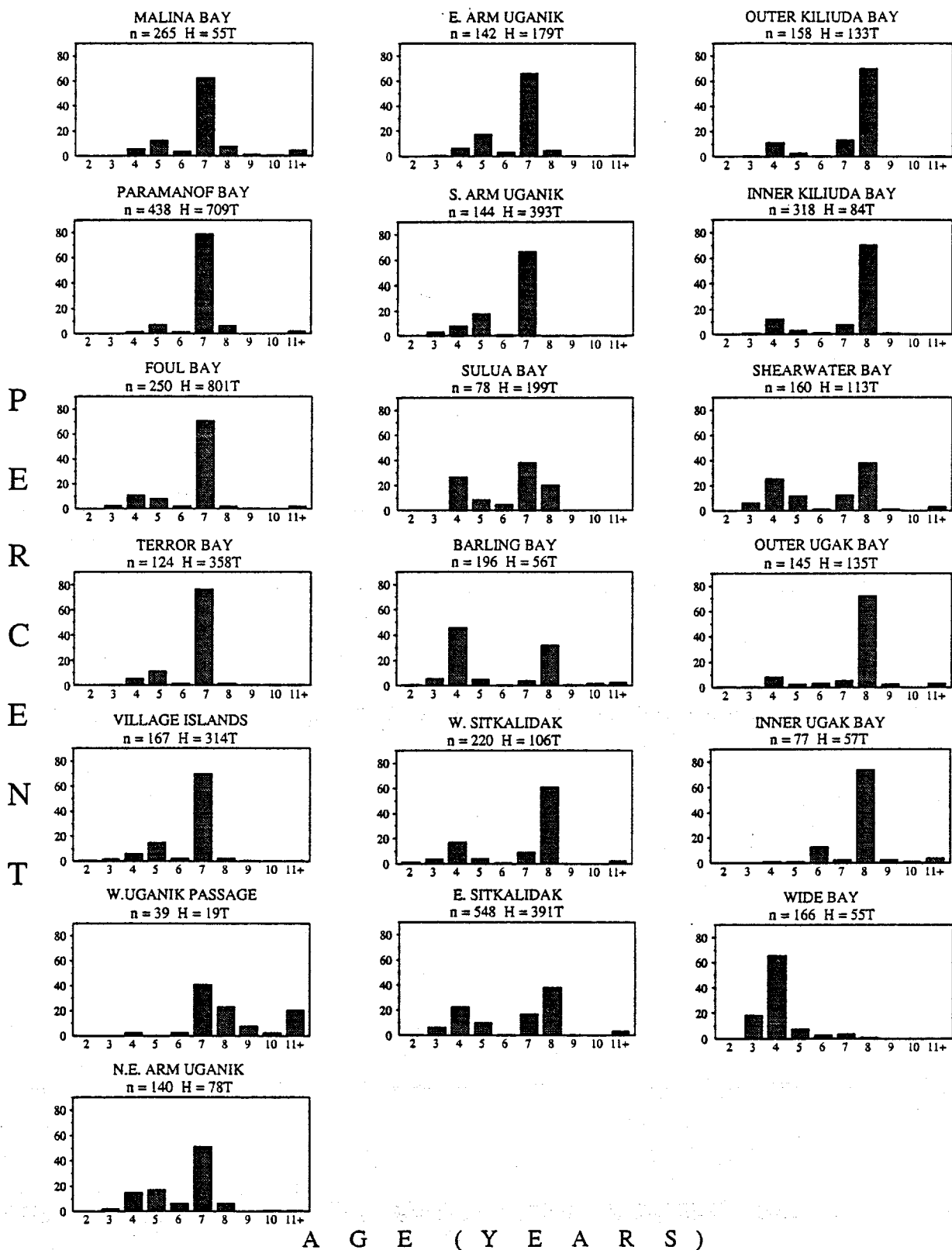


Figure 16. Summary of sac roe herring average length and weight at age, and percent of each age class in commercial catch samples for the Kodiak Management Area, 1995.



1/ ALL SAMPLES WERE COLLECTED FROM COMMERCIAL SEINE CATCHES BY ADF&G PERSONNEL.

Figure 17. Age frequency (%) by management unit for the 1995 Kodiak sac roe herring fishery.

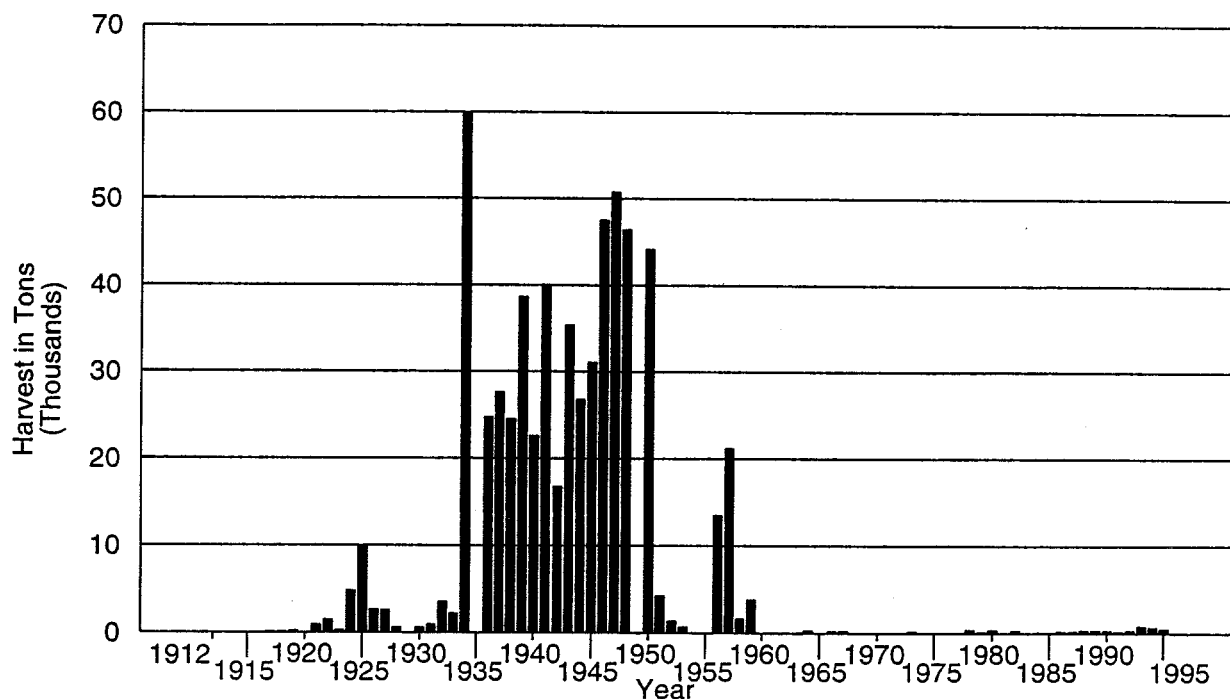


Figure 18. Historic food/bait herring harvest for the Kodiak Management Area 1912-1995.

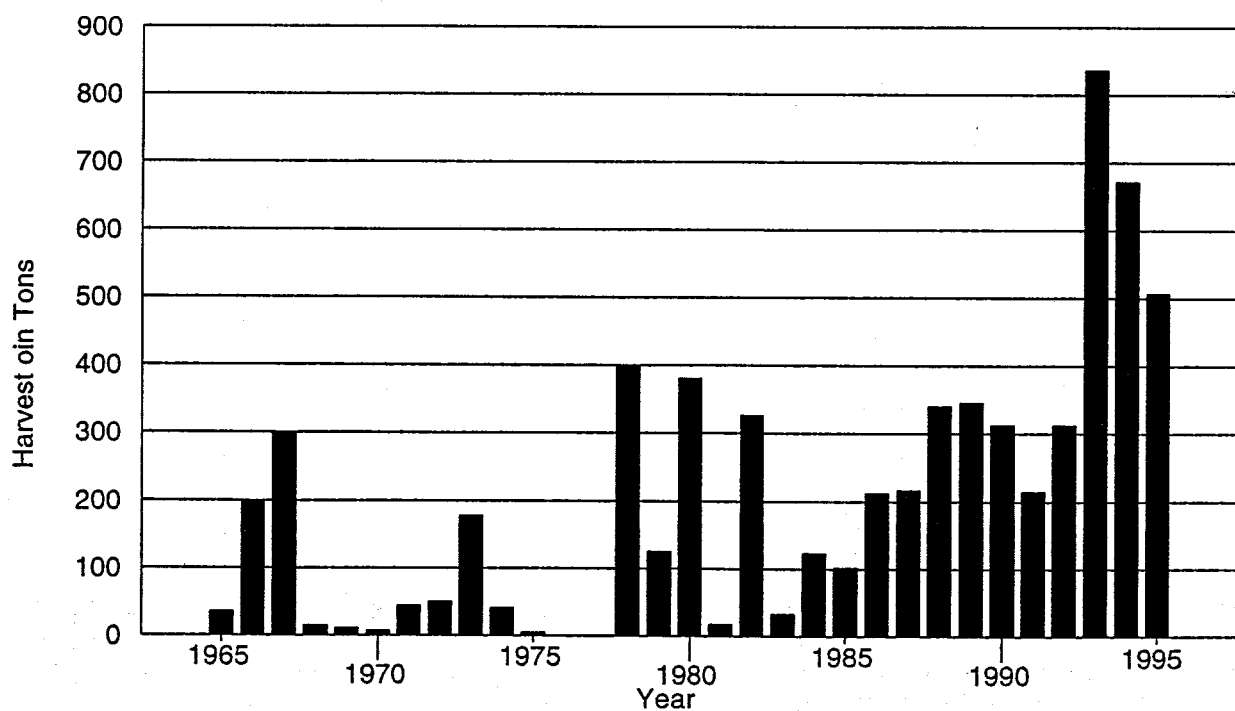


Figure 19. Historic food/bait herring harvest for the Kodiak Management Area 1965-1995.

APPENDIX

Appendix A. Summary of emergency order abstracts issued for the sac roe herring fishery, Kodiak Management Area, 1995.

EMERGENCY ORDER NO. 4-FH-K-01-95
EFFECTIVE DATE: April 15, 1995

EXPLANATION:

This emergency order describes new section and district boundaries for the 1995 Kodiak Area commercial sac roe herring fishery, specifies waters closed to commercial herring fishing, and establishes commercial herring fishing periods.

For the 1995 commercial sac roe herring fishery Kodiak Area section and district boundaries have been redescribed to follow the most current datum baseline (1983), as used on new NOAA marine charts. The commercial herring fishery is managed by geographical area, so the Kodiak Area is divided into districts, which are further subdivided into sections. Several sections are new or have new boundary lines. This should better describe actual spawning areas use by a herring stock or define geographical harvest locations.

The following management units will remain closed throughout the 1995 season, to protect herring stocks which have shown declines in abundance over the past several years:

South Afognak District

(SA10) Izhut Bay
(SA20) Kitoi Bay
(SA30) MacDonalds Lagoon
(SA40) Danger Bay
(SA50) Litnik
(SA60) Inshore Marmot (Duck Bay)

North Afognak District

(NA20) Delphin Bay
(NA30) Perenosa Bay
(NA40) Seal Bay
(NA50) Tonki Bay

Uyak District

(UY10) Offshore Uyak
(UY20) Harvester Is.
(UY30) Inner Uyak Bay
(UY31) Larsen Bay
(UY32) Browns Lagoon
(UY40) Zachar Bay
(UY50) Spiridon Bay

Inner Marmot District

(IM20) Anton Larson Bay

Beginning April 15, the fishery will open for 24 hour fishing periods, each of which begins at 12:00 Noon on the odd numbered days of the month and closes at 12:00 Noon on the even numbered days of the month. Each 24 hour opening will be separated by a 24 hour closure in the entire management area. The only exception to this "24 hour on - 24 hour off" rule is the period from 12:00 Noon May 31 through 12:00 Noon June 2 when the fishery shall actually be open for a 48 hour period due to the occurrence of two consecutive odd numbered days.

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JUSTIFICATION:

Over the past several commercial sac roe herring fishing seasons it was discovered that there were inconsistencies between the legal description in the regulation book and the established boundaries of some sections. Further, the latitude and longitudes given for section and district boundaries in the regulation book were based on 1927 datum, and so did not reflect the most current information on new marine charts. Therefore, to reduce confusion and rectify problems it is necessary to redescribe these boundaries in regulation.

It has also become apparent over the past seasons that the herring stocks of the north and east side of Afognak Island and those of Uyak Bay have experienced a decline in abundance. These stocks have supported little or no commercial harvest in the last three seasons. It is expected that maximum numbers of purse seine gear will participate in the 1995 fishery, therefore a closure of these management units is warranted to prevent over exploitation.

Finally, regulations adopted by the Board of Fisheries established that fishing periods for the commercial sac roe herring fishery in the Kodiak Area would be announced by Emergency Order. During the sac roe herring fishing season, April 15 through June 30, the small herring stocks of the Kodiak Area are concentrated and so vulnerable to over exploitation. This Emergency Order is necessary to establish the initial and inseason fishing periods for the commercial sac roe herring fishery. A system of 24 hour openings separated by 24 hour closures provides reduced time that individual stocks are subject to exploitation and assists the Department by allowing adequate closed periods to collect harvest information and assess the situations in the various management units. Also, set 24 hour open periods allow Kodiak herring fishers opportunity to spread out throughout open areas, and to test and release herring which do not meet the market's current stringent standards for size and maturity.

EMERGENCY ORDER NO. 4-FH-K-02-95

EFFECTIVE DATE: April 17, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Paramanof Bay Section (WA31) of the West Afognak District effective at 9:00 P.M. Monday April 17, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Paramanof Bay Section of the West Afognak District (WA31) is 400 tons. Preliminary catch information indicates the catch for this area is at or over the

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guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-03-95

EFFECTIVE DATE: April 19, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Village Islands Section (UG30) of the Uganik District effective at 9:30 P.M. Wednesday, April 19, 1995, until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Village Islands Section of the Uganik District (UG30) is 250 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-04-95

EFFECTIVE DATE: April 20, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Terror Bay Section (UG21) of the Uganik District effective at 9:15 A.M. Thursday, April 20, 1995, until further notice.

In addition this emergency order reduces the length of the commercial sac roe herring fishing periods, from the previously announced 24 hour periods to 10 hours. Beginning April 21, fishing periods will run from 12:00 noon to 10:00 P.M. on odd numbered days, followed by 38 hours of closure.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Terror Bay Section of the Uganik District (UG21) is 200 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

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Also, inconsistent and low roe quality standards set by competing buyers have resulted in a majority of the purse seine fleet targeting herring which under "normal" conditions have only marginally acceptable roe percentages. In order to find marketable fish a portion of the purse seine fleet has been continually sorting (setting, testing, and releasing) through multiple schools of herring. There are a near record number of purse seine permits active for the fishery this season, and tender capacity on the grounds is at an all time high. With the fleet spread out it has become impossible for the ADF&G crews to closely monitor the fishery, especially at night. Therefore, a reduction of fishing time, to encompass daylight hours only, is warranted.

EMERGENCY ORDER NO. 4-FH-K-05-95
EFFECTIVE DATE: April 21, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the South Arm Uganik Section (UG34) of the Uganik District effective at 1:15 P.M. Friday April 21, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the South Arm Uganik Section (UG34) of the Uganik District is 150 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-06-95
EFFECTIVE DATE: April 23, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the East Arm Uganik Section (UG33) of the Uganik District effective at 1:30 P.M. Sunday April 23, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the East Arm Uganik Section (UG33) of the Uganik District is 100 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

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EMERGENCY ORDER NO. 4-FH-K-07-95

EFFECTIVE DATE: April 23, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Northeast Arm Uganik Section (UG32) of the Uganik District effective at 1:30 P.M. Sunday April 23, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Northeast Arm Uganik Section (UG32) of the Uganik District is 30 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-08-95

EFFECTIVE DATE: April 25, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Foul Bay Section (WA32) of the West Afognak District effective at 12:50 P.M. Tuesday April 25, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Foul Bay Section (WA32) of the West Afognak District is 75 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-09-95

EFFECTIVE DATE: April 27, 1995

EXPLANATION:

This emergency order extends the current commercial herring fishing period an additional 14 hours, from 10:00 P.M. Thursday April 27 until 12:00 Noon Friday April 28, 1995 in the following management units: The entire Eastside District (Sections EA10 through EA52), the

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Raspberry Strait (WA10) and Malina Bay (WA20) Sections of the West Afognak District, and the West Uganik Pass Section (UG31) of the Uganik District.

JUSTIFICATION:

It is desirable to return to "normal" 24 hour commercial herring fishing periods in the Kodiak Area. There has been a decrease in the purse seine effort, with seine boats leaving the Kodiak area for the Kamishak and Togiak areas. To allow fishermen more time to find quantities of marketable herring, while still allowing for adequate management of the commercial sac roe herring fishery, fishing time could be extended in those management units where it is possible for ADF&G to closely monitor the catch. Therefore, a 14 hour extension of the current 10 hour fishing period is warranted in the Eastside District (Sections EA10 through EA52), the Raspberry Strait (WA10) and Malina Bay (WA20) Sections of the West Afognak District, and the West Uganik Pass Section (UG31) of the Uganik District.

EMERGENCY ORDER NO. 4-FH-K-10-95

EFFECTIVE DATE: April 28, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Outer Kiliuda Bay Section (EA43) of the Eastside District effective at 12:01 A.M. Friday April 28, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Outer Kiliuda Bay Section (EA43) of the Eastside District is 80 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-11-95

EFFECTIVE DATE: April 29, 1995

EXPLANATION:

This emergency order extends the current commercial herring fishing period an additional 14 hours, from 10:00 P.M. Saturday April 29 until 12:00 Noon Sunday April 30, 1995 in the following management units: The Eastside District (Sections EA10 through EA52) except for the Outer Kiliuda Section (EA43) which remains closed, the Raspberry Strait (WA10) and Malina

-Continued-

Bay (WA20) Sections of the West Afognak District, and the West Uganik Pass Section (UG31) of the Uganik District.

JUSTIFICATION:

It is desirable to return to "normal" 24 hour commercial herring fishing periods in the Kodiak Area. There has been a decrease in the purse seine effort, with seine boats leaving the Kodiak area for the Kamishak and Togiak areas. To allow fishermen more time to find quantities of marketable herring, while still allowing for adequate management of the commercial sac roe herring fishery, fishing time could be extended in those management units where it is possible for ADF&G to closely monitor the catch. Therefore, a 14 hour extension of the current 10 hour fishing period is warranted in the Eastside District (Sections EA10 through EA52) except for the Outer Kiliuda Bay Section (EA43) which remains closed, the Raspberry Strait (WA10) and Malina Bay (WA20) Sections of the West Afognak District, and the West Uganik Pass Section (UG31) of the Uganik District.

EMERGENCY ORDER NO. 4-FH-K-12-95

EFFECTIVE DATE: May 1, 1995

EXPLANATION:

This emergency order extends the current commercial herring fishing period an additional 14 hours, from 10:00 P.M. Monday May 1 until 12:00 Noon Tuesday May 2, 1995 in the following management units: The Eastside District (Sections EA10 through EA52) except for the Outer Kiliuda Section (EA43) which remains closed, the Inner Marmot District (Sections IM10 through IM50) except for the Anton Larsen Bay Section (IM20) which remains closed, the Northeast District (Sections NE10 through NE50), the Raspberry Strait (WA10) and Malina Bay (WA20) Sections of the West Afognak District, and the West Uganik Pass (UG31) and Viekola Bay (UG20) Sections of the Uganik District.

JUSTIFICATION:

It is desirable to return to "normal" 24 hour commercial herring fishing periods in the Kodiak Area. Purse seine effort has continued to decrease, with seine boats leaving the Kodiak area for Togiak. To allow fishermen more time to find quantities of marketable herring, while still allowing for adequate management of the commercial sac roe herring fishery, fishing time could be extended in those management units where it is possible for ADF&G to closely monitor the catch. Therefore, a 14 hour extension of the current 10 hour fishing period is warranted in the Eastside District (Sections EA10 through EA52) except for the Outer Kiliuda Bay Section (EA43) which remains closed, the Inner Marmot District (Sections IM10 through IM50) except for the Anton Larsen Bay Section (IM20) which remains closed, the Northeast District (Sections NE10

-Continued-

through NE50), the Raspberry Strait (WA10) and Malina Bay (WA20) Sections of the West Afognak District, and the West Uganik Pass (UG31) and Viekoda Bay (UG20) Sections of the Uganik District.

EMERGENCY ORDER NO. 4-FH-K-13-95

EFFECTIVE DATE: May 2, 1995

EXPLANATION:

This emergency order reestablishes the "normal" commercial herring fishing periods, to be 24 hours in length, in those management units which have not been closed by previous emergency order. Beginning on May 3, herring fishing periods will start at 12:00 Noon on the odd numbered days of the month and will close at 12:00 Noon on the even numbered days of the month. Each 24 hour fishing period will be followed by a 24 hour closure in the entire management area. The only exception to this "24 hour on - 24 hour off" rule is the period from 12:00 Noon May 31 through 12:00 Noon June 2 when the fishery shall actually be open for a 48 hour period due to the occurrence of two consecutive odd numbered days.

Further, this emergency order closes to commercial herring fishing the Shearwater Bay (EA42) and the Inner Kiliuda Bay (EA44) Sections of the Eastside District effective at 12:00 Noon Tuesday May 2, 1995 until further notice.

JUSTIFICATION:

It is desirable to return to "normal" 24 hour commercial herring fishing periods in the Kodiak Area. Purse seine effort has continued to decrease, with many seine boats leaving for Togiak. A system of 24 hour openings separated by 24 hour closures provides reduced time that individual stocks are subject to exploitation and assists the Department by allowing adequate closed periods to collect harvest information and assess the situations in the various management units. Also, set 24 hour open periods allow Kodiak herring fishers opportunity to spread out throughout open areas, and to test and release herring which do not meet the market's current stringent standards for size and maturity. With the decrease in purse seine effort it is again possible for ADF&G to adequately monitor harvests to prevent over exploitation.

Further, the 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Shearwater Bay Section (EA42) is 90 tons, and for the Inner Kiliuda Bay Section (EA44) is 80 tons. Preliminary catch information indicates the harvests for these areas are at or over the guideline harvest levels. Consequently a closure of these management units is warranted to prevent over exploitation.

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EMERGENCY ORDER NO. 4-FH-K-14-95

EFFECTIVE DATE: May 8, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Tanginak Anchorage Section (EA31) of the Eastside District effective at 12:00 Noon Monday, May 8, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Tanginak Anchorage Section (EA31) of the Eastside District is 15 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-15-95

EFFECTIVE DATE: May 13, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Sulua Bay Section (AL30) of the Alitak District effective at 8:00 P.M. Saturday, May 13, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Sulua Bay Section (AL30) of the Alitak District is 190 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-16-95

EFFECTIVE DATE: May 13, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Barling Bay Section (EA24) of the Eastside District effective at 4:00 P.M. Saturday, May 13, 1995 until further notice.

-Continued-

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Barling Bay Section (EA24) of the Eastside District is 50 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-17-95
EFFECTIVE DATE: May 17, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Outer Ugak Bay Section (EA50) of the Eastside District effective at 11:30 P.M. Wednesday, May 17, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Outer Ugak Bay Section (EA50) of the Eastside District is 60 tons. Preliminary catch information indicates the catch for this area is at or over the guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-18-95
EFFECTIVE DATE: May 24, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the East Sitkalidak Section (EA30) of the Eastside District effective at 12:00 Noon Wednesday, May 24, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the East Sitkalidak Section (EA30) of the Eastside District is 290 tons. Biomass estimates by spotter pilots and ADF&G crews on site indicated substantially higher than expected volumes of herring were present in the area, and so the desired guideline harvest was increased to 390 tons. Preliminary catch information indicates the catch for this area

-Continued-

is at or over that guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

EMERGENCY ORDER NO. 4-FH-K-19-95
EFFECTIVE DATE: June 12, 1995

EXPLANATION:

This emergency order closes to commercial herring fishing the Portage Bay Section (AL31) of the Alitak District effective at 12:00 Noon Monday, June 12, 1995 until further notice.

JUSTIFICATION:

The 1995 Kodiak Management Area Herring Sac Roe Harvest Strategy (R.I.R. #4K95-15) states that the guideline harvest for the Portage Bay Section (AL31) of the Alitak District is 75 tons. Preliminary catch information indicates the catch for this area is at or over that guideline harvest level. Consequently a closure of the entire management unit is warranted to prevent over exploitation.

CONDITIONS OF THIS PERMIT

1. This permit provides for the taking of herring for subsistence/personal use purposes during the commercial herring sac-ro-e fishery. Herring caught under the conditions of this permit are for personal use only and may not be sold.
2. This permit is valid only for persons not participating in the commercial sac-ro-e fishery as a permit holder or crewman.
3. Commercial sac-ro-e fishermen participating in the Kodiak sac-ro-e fishery as a permit holder or crewman may retain herring from their lawfully taken commercial catch to fulfill their personal bait or food requirements.
4. For the purposes of this permit participating in the commercial sac-ro-e fishery means: being a permit holder or crewman who is operating commercial herring gear or on a vessel which has commercial herring gear on board.

WHEN: This permit is only required from April 15 through June 30; no permit is required to take subsistence/personal use herring during the remainder of the year, from July 1 through April 14. During the sac-ro-e season there are no closed periods to subsistence/personal use fishing.

WHERE: This permit is valid for all waters of the Kodiak Management Area, including those closed to commercial herring fishing. However, at any time, if biological or unlawful circumstances warrant it, emergency order closures of pertinent areas may be required.

HOW: This permit limits the type and quantity of gear to gillnet gear not exceeding 25 fathoms in length. The net must be attended at all times while fishing and be marked with buoys which have your name and address on them.

HOW MUCH: There are no restrictions on the amount of herring which can be taken with this permit.

REPORTING REQUIREMENTS: A complete record of harvest activity must be kept on the reverse side of this permit, to include harvest estimate in pounds of fish and the harvest location as well as type of use.

MISCELLANEOUS: No herring caught under the conditions of a herring subsistence/personal use permit may be onboard a vessel which also has commercially caught herring on board.

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